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The Subterraneous Watercourses in the Magnesian Limestones of Lehigh County, Pa.*

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THE frequent occurrence of these under-ground streams in the limestone districts of Lehigh County, and the relations which they bear to the overlying topography, render them of considerable interest; and although the subject may, at first sight, seem to be of little economic importance, yet, when the fact is taken into consideration that the exploitations for limonite are occasionally very much retarded, and in some instances facilitated, by them, it will be seen that anything tending to throw light on this (in Lehigh County) hitherto almost neglected subject, will be of value to all interested in the hematite mines of the county.

In the townships of Upper and Lower Macungie three prominent springs are found in nearly the same line, which has a direction of N. 60° E.

The first is the head-waters of Spring Creek; it rises within half a mile West of Trexlertown, and is evidently quite superficial. Three streams descend from the slate hills to the North and West of Breinigsville, respectively known as Copperas Run, Breinigs Run, and Schaffers Run.

Although the point at which these three streams should meet is indicated by the surrounding topographical features, yet nothing but an indistinct dry bed is seen in Summer and Fall.

In Spring these streams take their natural course, which fact would seem to indicate that the subterraneous cavern was of limited lateral extent, and could not convey the augmented quantity of water incident to the Spring freshets.

It is quite possible that the cavernous limestone may not be instrumental in the transportation of the water in this instance, as the fall of the ground is so slight that were the waters to descend to the depth of 25 or 30 feet, which in many places would be necessary to reach the limestone, as it but seldom outcrops along the topographically indicated bed of the stream, they would not reappear in so short a distance.

It is, therefore, quite possible that the water percolates through the soil—a gravel mixed with clay—coming in small quantities to the surface on the South side of the Breinigsville road, 500 feet West of the main spring, and at the latter place bubbling up freely from several holes within a radius of 200 feet, emitting a stream which measures 40 feet in width and 6 inches in depth, flowing sluggishly at the rate of about a mile an hour.

The second under-ground water passage is met with at Guchenback's ore bed.

This mine was for many years extensively and profitably worked until recently, when a copious spring of *hard* water was struck at the bottom, and since that time the mine, we are informed, has ceased to be profitable.

Various plans have been tried to keep the mine clear of water, all of which have failed.

The amount thrown out by the pumps (4 in number—10-inch double acting) is estimated at eleven millions of gallons per day.

A device was tried which, it was hoped, would be so far successful as to admit of one-half of the mine being worked.

The *modus operandi* was as follows:

A strong crib-work of timber was erected in the middle of the mine, and at the same time earth, in some instances stripping from the ore, was thrown into the aperture from which the water issued.

This, it was argued, would have a tendency to choke up the stream, and even if no other advantage was gained, would, at least, permit the extraction of the ore which is defended from the encroachment of the water by the timber bulwark.

Since the above was written I have received information that the attempt was not a success, and that the mine is now drowned out.

None of the other mines in the same range as Guchenback's have met with this watercourse; none of them, however, have attained to the same depth.

A rather interesting feature is exhibited at Stein's ore bed, one mile South-west of Fogelsville. Here, at the bottom of the mine, limestone is found, and in it an aperture whose superficial area is about 10 square inches. Into this all the waters of the mine find their way, obviating the necessity of a pump.

The third spring makes its appearance at Schantz's mill, 1¼ miles North of Wescoeville, between two low ridges. The one to the Northward is the outcrop of a laminated limestone. No outcrop is found on the other. These ridges meet to the Westward in somewhat of a V shape, cutting into a hill known as Chapperal Ridge.

Analogy would, at first sight, lead the observer to surmise that the waters at Schantz's mill were identical with those at Guchenback's ore bed, but such does not appear to be the case.

The water at Schantz's mill is quite soft; that at the mine is the reverse. The water at the mill is perfectly clear, and no muddying has been observed, which would not be the case were the streams identical, as the quantities of earth thrown in at the mine would discolor the water of the mill, as they are within two miles of each other.

Whether these subterranean cavities are fissures between two layers of limestone, or cracks extending through the stratification with no relation to the strike, or a tunnel eaten through the beds by the dissolving qualities of the water, or a trough-shaped cavity at the bottom of a synclical, is a matter difficult to determine.

I am inclined to take the latter view, by reasons both topographical and geological.

To the Southwest of Fogelsville, a triangularly-shaped slate hill juts into the limestone valley, and from the outcrop at its base it is surmised to be a synclinal depressed to the plane of the horizon.

Now, if the country to the Eastward should fall more rapidly than the depression of the synclical, it is evident that the upper strata of the limestone would first come to the surface, then the next lower, and so on.

The limestone at Schantz's mill dips on the northern side towards the spring, but no outcrops are found on the southern ridge.

The course of the synclinal at the triangular slate hill continued, would strike near the mill, and, grouping all these facts together, we think it likely that this spring is one of the outlets of the drainage from the slate hills, for, perhaps, 15 miles back, and that the water makes its way along the bottom of a depressed synclical which comes to the surface at Schantz's mill.

EMAUS, May 20, 1875.

* A paper read before the American Institute of Mining Engineers, at the Dover meeting, May 25, 1875.

Rotary Puddling.

ADDRESS OF MR. MENELAUS AT THE MEETING OF THE IRON AND STEEL INSTITUTE OF GREAT BRITAIN.

CONCLUDED FROM PAGE 420.

As we know, Mr. SIEMENS has for some years been engaged on a method for producing malleable metal direct from the ore. The process consists in treating ore with reducing materials in a rotary furnace, under the influence of a reducing atmosphere, accompanied by the intense heat produced by his regenerative gas furnace. His object is to produce either bar iron or metal for the bath-furnace direct from the ore in one operation, and at a greatly reduced expenditure of fuel; but, although this method has, as I understand, succeeded experimentally, proof is as yet wanting of its practical success on a large scale.

M. PERNOT has applied Maudsley's revolving pan, not only for puddling, but also for making Siemens-Martin steel. The furnaces produce over 10 tons of steel per shift of twelve hours. The waste is said to be 7 per cent., and the consumption of fuel 7 cwt. to the ton of ingots made. The cost of labor is stated to be 4 fr. per ton. This furnace is worthy of the attention of English steel makers, and is, I think, destined to play an important part in the manufacture of Siemens-Martin steel. I have said that Mr. BESSEMER has given us what may be fairly called a new metal, and a wonderful metal it is; and that, by an entirely different process, Mr. SIEMENS has enabled us to produce the same metal, also, at a moderate cost, and with all the excellent qualities of Bessemer metal. For a considerable period I have been engaged in making Bessemer and Siemens-Martin soft steel, and I claim to know something of the excellences of both.

When the Bessemer process was comparatively new, when workmen had to be educated to a new business, and when there was less of that strictly scientific control which has been found to be indispensable wherever the Bessemer or Simens process is successfully carried on, the quality of the metal then made was no doubt variable to some extent. There was also a period when we were dependent on foreign countries for our supplies of spiegeleisen, and when the quality of that material fell off, when it was deficient in manganese, and full of impurities; and it may be frankly admitted that in these times it was very difficult to make large quantities of steel of excellent and perfectly uniform quality.

Now all this is altered. We have plenty of highly skilled and specially trained workmen, who work under the direction of men who have had a scientific training and many of whom have distinguished themselves in scientific research. Moreover, we have now pig iron of uniform and excellent quality; and since we commenced the manufacture of spiegeleisen in England we have that material free from impurities, and with any percentage of manganese we require, up to 20 per cent., and even considerably over. With these advantages steel can now be produced in large quantities by the Bessemer and Siemens process of any desired character, and practically uniform in quality.

Speaking as a manufacturer, I am of opinion that, with our present knowledge, in no other form can iron or steel be produced at the same cost, and of a quality equal to that of the steel made by the Bessemer and Siemens processes. Having a high opinion of the value of the material for constructive purposes, and seeing with how much success it has been applied on our leading railways, and how it has almost completely superseded the old forms of wrought iron, where it has been introduced with skill and a full knowledge of its properties, I wonder, and wonder much, that many of our leading engineers and shipbuilders have ignored this material as if it did not exist; and this, in the face of the fact that for years this metal has been used for purposes where only material of the highest quality is admissible, and that it has given, and is giving, so much satisfaction that those men speak of it the most favorably who have used it most largely. So many distinguished mechanical engineers have used Bessemer steel, that in speaking of their varied experience, I hardly know where to begin.

Sir JOSEPH WHITWORTH is making from the Bessemer converter some of the finest material known. By his process of compressing the steel, while it is in

a liquid condition, he produces a quality far superior to anything which can be made by the ordinary methods of treatment. Sir JOSEPH writes: "During the last twelve months we have been working night and day, principally on guns, cylinders for hydraulic purposes, cylinder linings, torpedoes, &c.; the melting has been by the Bessemer and crucible processes, and we are just about to use the Siemens-Martin process also. The state of my health has prevented us from commencing new works, but we hope to do so before long." This material is as yet too expensive for use in ordinary work, but Sir JOSEPH has shown that out of the Bessemer converter can be produced, as I have said, some of the finest material known.

Mr. RAMSBOTTOM, when at Crewe, began to use Bessemer steel in the construction of locomotives, and for other purposes, and his able successor, Mr. WEBB, has greatly distinguished himself by his care in the manufacture of Bessemer and Siemens steel, and by his skillful and spirited application of the metal to almost every purpose, and particularly in cases where material of the very highest quality is indispensable. No man, I think, has done more than Mr. WEBB to improve the quality of mild steel, or so much to extend its general use.

Mr. SHARP, of Bolton, was one of the first to produce excellent boiler and ship plates of steel, and to make boilers of steel plates. Mr. SHARP tells me that they have made between nine and ten thousand tons of steel plates at Bolton, three-fourths of which have been used in the construction of boilers. He says that steel plates, with a tensile strength of from 30 to 40 tons, are easily and safely worked by experienced men. They have had steel boilers at work for nine years, and they have given perfect satisfaction, and the repairs are light as compared with those of iron boilers.

Mr. ADAMSON, whose talent as a mechanical engineer is well known to us all, informs me that in his steam engines, when the choice of materials is left with him, all the principal parts are made of Bessemer steel and that the results have been most satisfactory. Mr. ADAMSON states that he has used various kinds of steel in boiler work, but since the introduction of Bessemer steel plates, he has used no other; of this material he has made between six and seven hundred boilers, mostly for high pressures. He is now making a number of steel shell and fire-box boilers, of 7 feet diameter, to work to 80 lb. and 100 lb. pressure per square inch. Mr. ADAMSON has used mostly steel plates of Barrow make. He says that they are very uniform in quality, and from all causes he has not had to return or set aside more than one plate in a thousand. He describes his method of working steel plates as follows: "A piece is cut off every plate and tested before the plates are accepted; the edges of the plates, when used for boilers, are all planed, the rivet holes are drilled through both plates together, after the plates are bent and in place; in every case double or chain riveting is adopted." He goes on to say: "In the application of steel plates for fire-boxes I have experienced the most satisfactory results; there is no blistering, and the plates show great endurance. When boilers have been allowed to run short of water, the plates have bulged or collapsed, but they were never fractured." In this respect he thinks that steel plates are superior to any iron ever made. Mr. ADAMSON, like Mr. SHARP, advocates the use of steel of comparatively low tensile strength, from 30 to 32 tons per square inch. Steel of 38 to 40 tons to the inch was found quite unsuitable for boiler work; it was wanting in ductility, and the use of such a material was quickly abandoned. A great deal has been said and written about the want of uniformity in Bessemer steel, but what could be more satisfactory than Mr. ADAMSON's experience on this head?

Messrs. GALLOWAY, of Manchester, who have a large experience in boiler making, and who are noted for the excellence of their work, inform me that when they commenced using Bessemer steel plates, about 1861, the results were not satisfactory, the plates being too hard, but that of late they have used steel plates extensively, and that the conclusion they have come to is that when the annealing is carefully performed, the plates are perfectly trustworthy; in fact, in the testing of boilers they now find quite as litttle trouble with steel plates as with iron plates, if not less. They state further, that careful annealing has a most beneficial effect; and they refer to some experiments made for the Manchester Boiler Insurance Company, by Mr. KIRKALDY, on the strength of riveted joints, which conclusively proved that even in the case of wrought-iron plates, which are punched, it is advisable to anneal them.

With respect to the employment of steel for bridge work, Mr. MAYNARD, of the Crumlin Viaduct Works, writes: "With regard to the question of employing steel for railway bridges in this country, I may at once say that, practically speaking, steel is excluded from use by the somewhat arbitrary limitation—laid down by the Board of Trade—to 5 tons strain per square inch when used in tension, and 4 tons per square inch when used in compression, no higher strain being allowed, whatever may be the quality of the material—and even if steel is used in place of iron. When a girder bridge is required of a trifle over 400 feet span for a railway, it is found that the weight of the iron, &c., necessary for its construction is alone sufficient, without the rolling load of a train, to strain the iron in the most important parts of the structure to very nearly, if not fully, the limit laid down by the Board of Trade—therefore, we make but little progress in large span bridges in this country. Steel has been employed very successfully in some bridges of large span which I have seen in Holland and elsewhere, whilst in England we adhere to the old rule of thumb practice, without much chance of improvement. It is obvious that if a material is used that will bear a high strain, it results in a lighter and stronger structure, and I should be glad to employ steel even in small girders, but for the difficulty of getting the Board of Trade to acknowledge its superiority over iron, and to allow a higher strain to be imposed than is adopted for iron."

Having given you the results of the experience of some of our leading mechanical engineers as to the value of mild steel for constructive purposes, I have now the pleasure of laying before you the opinion of a man who has earned a world-wide reputation as a ship-builder, and whose professional advice is sought by the most powerful Governments in Europe; Mr. REED, the late Chief Constructor of our Navy, writes to me as follows: "In reply to your favor of the 20th, allow me to say that for more than two years past I have been thoroughly satisfied that the production and methods of working steel had reached a point when that material might be extensively and very advantageously used for shipbuilding purposes. I, therefore, designed some very fast war vessels in steel, and obtained some provisional orders for them, but when I came, two years ago, to the question of building, I could not satisfy myself that the proper supplies could be secured under the same conditions and facilities as iron. This was due, however, entirely to the fact that my orders would not have been sufficient alone to justify any large firm in entering systematically upon the production of steel plates and angles for ship purposes. Great progress has been made in this respect since then, and I am now receiving orders for dispatch war vessels to be built of steel—boilers and engines as well as vessels—and I am about to build two at Pembroke, and probably to place others for construction in other establishments. It will, therefore, be a very great advantage if in your address you can stimulate the attention of the profession and the trade to the subject, because I am satisfied that when once a systematic commencement is made there will, henceforth, be no obstruction to the large development of steel for shipbuilding. I say nothing here about the special arrangements which the use of steel for shipbuilding purposes renders necessary, because, although they are unusual and additional, they are such as present no real difficulties to a careful builder."

I would also call attention to the somewhat extensive use of steel in the French navy; and, above all, I would point to what the Germans are doing. In Germany there is no want of confidence in the character of steel. Mr. KRUPP, who may be called the father of the steel trade, has evinced a wonderful amount of skill in the production of large masses of steel, and in its application to purposes where its strength and ductility are submitted to the most severe tests.

Mr. LONGSDEN informs me that they are making at Essen at the present time 14-inch guns of steel, which weigh, when finished, 57½ tons, carrying a shot of 9 cwt. 9¼ English miles, using a charge of 210 lb. of gunpowder. They are about to make steel guns of the following capacities and weights—15¾-inch bore, 30 feet long, weighing 82 tons, using 300 lb. of powder, with a shell of 1500 lb. weight; guns of 18-inch bore, 32 feet 6 inches long, weighing 124 tons, using 440 lb. of powder with a shell of 2270 lb. weight. Mr. LONGSDEN demurely adds: "It is calculated, for the present, that these guns will be heavy enough to destroy any armor a ship can carry." In gloating over the destructive properties of these weapons, he is leaving out of his calculation, perhaps, the flash-of-lightning ships which Mr. REED is about to build, and which may, under smart management, be able to get out of the way of such a conspicuous object as a shell weighing over a ton, even when fired with about a quarter of a ton of gunpowder.

In alluding to the use of high-class steel for guns, I wish it to be understood that I am not seeking to give any opinion as to the superiority of steel over wrought iron for this special purpose. I merely wish to call attention to the fact that in Germany, and, I believe, in most Continental countries, as also, I may add, by one, at least, of our most celebrated gunmakers in England, steel is being used for making guns of the heaviest description; and it is well known that these steel guns have stood the most severe tests at proof, and also when put to their more legitimate use.

Speaking of guns gives me the opportunity of calling special attention to the wonderful structures in wrought iron now being built up at Woolwich and Elswick. Forgings are made there which, for weight and quality of material, were never equalled; and the guns, when finished, even if looked at simply as engineering works, reflect credit not only upon the men who produced them, but upon England as a nation. As we are about to have an inquiry as to the merits of these guns, I sincerely hope that it may turn out, as I daresay it will, that these wonderful weapons have not been constructed to load at the wrong end.

You will have observed that in speaking of the present position of mechanical puddling, and of the improvements now in progress, I have preferred, for the most part, to use the language in which the information reached me. It was my intention, for the purpose of this address, to make a tour through all the works in England and France where puddling machinery is in operation. But when I considered that some machines of great promise are still, strictly speaking, in their experimental phase, I felt that, in these circumstances, even a very careful inspection would not enable me, from my own observation, to arrive at perfectly sound conclusions. I therefore thought it better to invite the gentlemen who are so ably, and, I think, successfully, working out the problem of mechanical puddling, to give me information as to the results of their experience, and as to the prospects of their various plans. These gentlemen have with the greatest courtesy furnished all the information that I sought—information which I am sure will be of the greatest interest to the members of this Institute. I have, like many of you, watched with great interest the advance of mechanical puddling; and from the day, long ago, on which I saw Mr. TOOTH at work at Stepney until now, I have never for a moment doubted that mechanical puddling would sooner or later be perfected. I think that there is now almost a certainty that this problem, upon which has been expended so much labor and thought, and which has brought to many so much disappointment, will within a short period be fairly solved. I have told you, on the authority of Mr. BESSEMER and Mr. SIEMENS, what improvements they are contemplating in the way of cheapening the production and increasing the make of steel, and I believe that every leading steel maker in England is engaged in devising new modes, or introducing methods already tried, for increasing and cheapening production, and no less for ensuring excellence and uniformity of quality.

On the question of the applicability of steel to various purposes where it is now used but sparingly or not at all, I have sought the opinions of men whom we all know, most of them being members of this Institute, and all of them holding high rank in their profession; and here again I have preferred, where it was practicable, to give the opinions of the various gentlemen in their own language. Although I have expressed my surprise that steel has not been more largely employed in great engineering works and shipbuilding, I am well aware that there is much to be said in defence of the cautious policy which has guided our engineers and shipbuilders; and I have no desire to cast the slightest reflection on the members of either profession for the exercise of a caution which, in all the circumstances, was perhaps natural. If blame there be, manufacturers must take to themselves a fair share of it, as, at first, steel was made of unsuitable quality, and when this difficulty was got over, they were somewhat slow to put themselves in a position to supply the trade with steel of suitable sections at a moderate cost. For a long period, as I have said, steel was expensive, and this stood in the way of its general introduction. Makers having ascertained that it possessed great tensile strength as compared with wrought iron, were anxious that it should be used, if possible, with a comparatively high percentage of carbon, so as to retain this excellent quality; and at first, steel with a tensile strength of 40 tons per square inch and upwards was made into plates and used for other purposes, for which, as experience has proved, it was unfitted. There is now, however, amongst the manufacturers a perfect knowledge of what is wanted for various engineering purposes. There is also the power to produce steel of almost any shape or quality at a moderate cost, and it only requires the hearty co-operation of the engineering profession to induce manufacturers everywhere to erect suitable machinery for converting steel into the necessary forms for constructive purposes; and if reasonable encouragement is given in this direction, I have no doubt that healthy competition will soon bring the cost of steel to a point where it will, as a matter of economy, beat certain classes of iron out of the field. I assume, of course, that upon proper proof being given of the superiority of steel, the Board of Trade will modify their rules as to its use.

Although the proper use of this Institute is to discuss technical subjects, I will venture to follow the example of my predecessor, and say something of the present position and prospects of our trade. At our last annual meeting, Mr. BELL concluded his excellent address with the following hopeful and spirited remarks :—"Whatever difficulty may beset us at the present moment, it can only be of a temporary character. Of raw materials, we have an abundance ; of our skill as manufacturers, whatever may be said to the contrary, we have no reason to be ashamed, and it will be a strange thing if, with these advantages, British energy is unable to hold its own against any people in the world."

If England had a fair field she would, beyond doubt, hold her own ; and further would continue to be for a long period, as far as iron is concerned, the workshop of the world. But from many important markets in Europe, and from the United States of America, English iron and steel are practically excluded. Heavy import duties are imposed with the avowed purpose of encouraging native manufacture, which means excluding the manufactures of England. The effect of this policy is being severely felt at the present moment, for we have but little demand from Europe, and we seem to have lost our American market entirely.

With our free trade notions, we all believe that our neighbors in Europe and our friends in the United States are pursuing a mistaken policy ; that they had better confine themselves to the charming Arcadian occupations of growing "corn and wine," and let England continue to drudge in the grimy business of iron and steel making. Some sanguine persons believe that some day they will see the error of their ways, and that they will adopt the course above indicated. I confess that on this point I am far from hopeful. If it were merely a trade question, we might expect that, by and by, the example of England would be followed as a matter of self-interest, but it is needless to say that in powerful countries the home production of iron and steel means more than giving employment to a portion of the population. In certain contingencies it renders a nation independent of foreign supplies at times when such dependence would cripple the most powerful nation in the world. There is, moreover, another reason why we can hardly expect to see, within a reasonable time, the principles of free trade introduced. Governments have encouraged the growth of gigantic industries devoted to the manufacture of iron and steel ; and any one who has had the privilege of seeing the vast works of Creusot and Essen, would, I think, admit that no Government, however wise or strong, would lightly venture on a policy which would interfere with the prosperity of such establishments.

We must, I think, frankly accept the position in which we are placed, and prepare to seek new markets for our produce in countries which, even if they have the will, have not yet the power to impose restrictions on our trade.

Inducements and Facilities for Engaging in the Manufacture of Iron on the Pacific Coast.

IMMENSE beds of iron ore, and generally of the most valuable kinds, exist at many points in California as well as in the adjacent States and Territories. The great obstacles to the production of that metal here have been the high prices of labor and the difficulty of obtaining a good fuel for smelting the ores ; charcoal being too dear, and none of the fossil coal yet found here answering well for that purpose. It is claimed that the Lincoln coal, in Placer County, will serve this end satisfactory trials having been made of it. If this really be the case, it is an important fact, as heavy beds of iron ore exist in the same neighborhood.

The consumption of iron on this coast is, for the population, enormous, almost the whole of it being imported. As charcoal produces a quality of iron greatly superior to the best of mineral coal, and we have timber in abundance for making it, at most points where the ferruginous ores abound, the cost of that fuel will not be likely to delay much longer efforts being made to commence the manufacture of iron at some of the more favorable localities in the State. Several enterprises of the kind are now talked of, and there is little doubt but some of them will soon take a practical shape, one having, in fact, already done so. A substantial company, composed mostly of New York capitalists, was formed last Fall for the purpose of manufacturing this metal, the works to be located in the City of Sacramento, and run on ores obtained from Shasta County, the citizens of that place having contributed an eligible site for the smelting furnaces. The facility with which fuel can here be obtained, and the iron shipped to market, makes Sacramento a favorable locality for works of this kind.

Our annual importation of iron in its various forms ranges from two hundred and fifty to three hundred thousand tons, bought at an average prime cost of more than ten million dollars, all of which, with the exception of about fifty thousand dollars paid for Oregon-made iron, goes out of the country. Through the growing demands for mining machinery, and the increasing use of this material in the construction of buildings, bridges, etc., the consumption of iron on this coast is being rapidly extended.

On every pound of imported iron we have to pay a tariff, in the shape of freights and other charges, equivalent to fifteen or twenty dollars per ton, a sum greatly in excess of what it would cost to make a first-class article of pig iron in this State. If we should do no more than supply the home demand for this description of iron, it would not only serve to retain vast sums of money in the State, but would give rise to new industries in the manufacture of stoves, castings for agricultural implements, hardware, etc., most of which, instead of importing for domestic use, we could supply to our immediate and more distant neighbors.

Being so strongly appealed to by considerations of economy, it is only reasonable to suppose that the extraordinary inducements existing here for the manufacture of iron will stimulate to greater diligence those already about to embark in the business, and lead to the early inauguration of many new enterprises of this kind.—*San Francisco Commercial Herald.*

Quicksilver.

A VERY MARKED, but not wholly unexpected, decline has taken place in the price of quicksilver within the past two months. In the early part of January it was selling at $1 50 per lb., now at 65c. to 80c. In view of the fact that stocks had everywhere been kept low by a demand in excess of supply, such a rapid depreciation was not looked for, even by those well aware of the extensive discoveries of cinnabar that had been made in California during the preceding two years; nor has this decline been due to any accumulation that has occurred, but simply to an anticipated accumulation. If, then, the price of this commodity has tumbled nearly fifty per cent. in so short a time, and before the supply is as yet in excess of demand, where may it be expected to go when the market becomes glutted, as will soon most likely be the case? A further decline is inevitable.

Foreseeing this threatened result, certain large mine owners attempted not long since to form a combination with a view to keeping up prices. But this effort, as all such efforts under the circumstances necessarily must, proved a failure. The cinnabar deposits in this State are too numerous and widespread, and in the hands of too many owners, to render anything of this kind practicable. There are scores and hundreds of these deposits; this ore, in workable quantities, having been found in nearly half the counties in the State. Combinations, then, to keep up prices are out of the question.

But the business of mining for the precious metals is rapidly extending, both in this and many other countries, insuring a corresponding increased consumption of quicksilver; and it may happen that the price of the latter will not, for some time, fall below the point of profitable production. Owing to the extent and richness of the deposits, and the facility with which the ore can be mined and beneficiated, this metal can be produced here for 50c. per lb., and in some localities for even 40c., with profit. When it shall have fallen to 40c., should this ever occur, this reduced price will lead to the working of such quantities of low grade ores, as will have a tendency to arrest much further decline. The reduction of price that has already taken place, will add largely to the net profits of those engaged in gold and silver mining, and greatly stimulate the business. In Sonoma, Lake, and Napa Counties, the center of greatest activity in quicksilver operations, prospecting is still kept up; new claims being constantly located and much work being done in the way of development, putting up furnaces, retorts, etc., there being enough cinnabar, if appearances can be trusted, in these three counties to supply the entire coast —enough, in fact, to meet the demands of the whole world, if the reports of the local press and of parties interested may be relied upon.

But while the deposits of this ore seem to be especially plentiful in Napa, Sonoma, and Lake, they occur also in the adjacent counties of Mendocino, Solano, Yolo, and Colusa, whence they continue north into Trinity, occurring here in much profusion; holding on in that direction, they pass into Oregon, the indications met with near Jacksonville, in that State, denoting the existence there of rich deposits. Turning south, we have the mines at New Almaden, Santa Clara County, the earliest opened and the most extensively outfitted on the coast, making a considerable production, though not so large as formerly; the New Idria, Fresno County, also in full tide of successful operation, while several new companies who have lately started in at various points in San Benito, San Luis Obispo, and Santa Barbara Counties are getting well under way; some of them turning out nearly 300 flasks of quicksilver per month, a yield that they expect to rapidly increase.

From this outlook it is evident our mining interests are going to suffer no more from excessive prices of this metal, the probabilities being that the aggregate production of the State will be thirty per cent. larger this year than last, a ratio of increase that may be expected to continue for some time—as long perhaps as a paying market for this commodity can be found.—*San Francisco Commercial Herald.*

Production of Pig Iron in the United States during 1874.

FROM the *Bulletin* of the American Iron and Steel Association, we glean the following :

		No. of Stacks in blast, Dec. 31, 1874.	No. of stacks out of blast, Dec. 31, 1874.	No. of stacks built, Dec. 31, 1874.	Total Pig Iron produced in 1874, in net tons.	Stock of Pig Iron on hand, Dec. 31, 1874, in net tons.			
						Anthracite.	Bituminous and Coke.	Charcoal.	Total.
Maine		1		1	1,661				
Vermont		2		2	3,450				
Massachusetts		5	1	6	27,991	101,096	.....	37,128	138,224
Connecticut		3	7	10	14,518				
New York		37	21	58	326,721				
New Jersey		10	7	17	90,150	37,959	.....	.....	37,959
Penna.	Charcoal	21	18	39	40,978	.....	.....	21,533	21,533
	Lehigh Valley	29	18	47	316,789	28,791	.....	.....	28,791
	Schuylkill	30	13	43	232,420	40,787	.....	.....	40,787
	Up. Susquehanna,	8	17	25	88,243	12,868	.....	.....	12,868
	Lower "	20	17	37	137,556	22,990	.....	.....	22,990
	Shenango	16	16	32	156,419	.....	87,650	.....	87,650
	Allegheny County	5	6	11	143,660	.....	12,230	.....	12,230
	Miscellaneous	13	19	32	97,068	.....	15,591	.....	15,591
Maryland		13	10	23	54,556	4,497	3,853	7,608	15,958
Virginia		15	23	38	29,451				
North Carolina		2	6	8	1,340				
South Carolina			8	8	.....				
Georgia		4	6	10	9,786	....	3,989	35,053	39,042
Alabama		6	8	14	32,863				
Texas			1	1	1,012				
West Virginia		5	4	9	30,134	.....	5,601	3,370	8,971
Kentucky		11	16	27	61,227	.....	8,080	24,912	32,992
Tennessee		13	9	22	48,770	.....	2,781	24,985	27,766
Ohio.	Hanging Rock	31	13	44	111,888	.....	11,450	58,297	69,747
	Mahoning Valley	17	11	28	154,287	.....	25,777	.....	25,777
	Miscellaneous	11	10	21	158,826	.....	11,952	10,608	22,560
Indiana		3	5	8	13,732				
Illinois		3	7	10	37,946	....	16,025	57,891	73,916
Michigan		16	18	34	136,662				
Wisconsin		5	9	14	50,792	.....	.....	9,138	9,138
Minnesota			1	1	.....	.....	.....	.....	.....
Missouri		8	11	19	75,817	.....	11,500	39,794	51,294
Oregon		1		1	2,500	.....	.....	.....	.....
Utah		1		1	200	.....	.....	.....	.....
		365	336	701	2,689,413	248,988	216,479	330,317	795,784

Of the total number of furnaces built, 297 were to use charcoal, 177 bituminous coal and coke, 217 anthracite coal, 4 anthracite coal and coke, 1 peat and charcoal, and 5 charcoal and bituminous coal. It is estimated that the stock with dealers and speculators, in addition to 795,784 tons at furnaces and with agents, made a total of 1,000,000 tons.

THE ENGINEERING AND MINING JOURNAL.

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RICHARD P. ROTHWELL, C. E., M. E., ROSSITER W. RAYMOND, Ph. D., } Editors.

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WE have to postpone for a week or two our "Statistics of the Coal Production of the United States in 1874," on account of delays in getting back from our correspondents proofs sent for revision and correction.

WE have great pleasure in commending to the owners and managers of American metallurgical works, and to the patentees of American processes or machinery designed for mines or metallurgical works, a gentleman whose card, headed "*A Metallurgical Engineer*," will be found in another column. Sound judgment, combined with thorough theoretical and practical knowledge of the profession, qualifies him in an eminent degree for obtaining information of practical value to his clients. The absolute necessity which now exists for the owners of iron and other metallurgical works to avail themselves of every improvement by which the cost of production may be reduced, or its quality improved, should stimulate them to make themselves acquainted with the progress and improvements recently made in Europe. Profiting by what is adapted to our circumstances, and still further improving, as we generally do, the imported skill of the old country, we shall be able to produce our iron at a price which will enable us to greatly extend its uses and our markets, and thus revive a great industry which is now in such a deplorable condition. We commend the subject to the attention of those "whom it may concern."

The Emma Mine.

OUR enterprising and valued contemporary, the London *Monetary and Mining Gazette* (and among our exchanges there is none that shows more vitality and general improvement in this age of progress), in a recent number, when speaking of the Emma Mine, gives us credit for "urging" the opinion that this famous or infamous, mine is not "used up." We beg to inform our neighbor that we have nowhere expressed the opinion attributed to us. Reference is, doubtless, made to an illustrated article on the Emma, by Mr. J. H. MORTON, which appeared in the ENGINEERING AND MINING JOURNAL of May 8th, and in which our correspondent, so far from urging the views attributed to us by our too hasty contemporary, distinctly stated that "The great Emma 'bonanza,' the object of such wide celebrity, the basis of such extravagant promises, *is, with insignificant exceptions, worked out.*" Mr. MORTON argues that the vein is cut off by a fault, and that "there is good reason for a further extension of explorations downward." Like our London friend, "we decline to be held responsible for the opinions of our correspondents." And we fully concur in the advice that there should be "extreme caution on the part of investors and shareholders," in this and all other cases of "fancy" stocks.

That there is another paying deposit of ore in the vicinity of the Emma, can either be proved or disproved; but the search for it must be looked upon in about the same light as any other prospecting in a metalliferous district—a pure "adventure," to use the expressive English term, as opposed to "regular mining." These explorations will, necessarily, be both slow and costly, even if the diamond drill be used where it may be with advantage. And so far as we can at present see, this mine will continue for some time in the future as it has been in the past, a much more profitable enterprise for its managers, paid officials, and a few cunning stock-jobbers, than for *bona fide* investors.

The Doings of Divers Days Devoted to Delightful Diversions at Dover.

IT is not our intention to make this article in any way instructive. A vague notion that such would be our duty has weighed upon us, like an incubus, for more than a week, but we experienced sudden and complete relief on receiving two copies of the *Iron Era*, an enterprising weekly journal, published at Dover, in which the excursions of the American Institute of Mining Engineers, during its recent meeting at that place, are described with so much intelligence and accuracy, that we have transferred copious extracts from it to our columns, thereby discharging our serious obligations, and leaving ourselves free to indulge in retrospect, as we indulged in actual experience, our faculties of enjoyment rather than of study. For it is a profound fact that the best way to extract delight from a pleasure trip is to make believe that it is undertaken in pursuit of useful information. To enjoy scenery under the pretext of studying geology ; to stretch the limbs while nominally improving the mind ; to partake of very good dinners and circulate very bad puns, all in the cause of science—if this is not bliss, what is ?

The extension of branch railways through the part of New Jersey traversed in these excursions has, no doubt, incidentally been useful in the development of an extensive and profitable iron mining industry ; but from our present standpoint, the principal benefit derived from this railway system, and one which amply justifies the labor and expense which have been bestowed upon it, is the facility which it affords to a body of intellectual, distinguished, and agreeable gentlemen, like the American Institute of Mining Engineers, when they wish to distribute themselves with ease and rapidity over a large area in a short time, and to view, without that degree of bodily exertion which is destructive to the perceptive faculties, the beauties and resources of a region abounding in mineral wealth, blest with great natural loveliness, and diversified by numerous opportunities for lunch.

The institution of special cars is, we are pleased to know, not yet extinct. Certainly good use was made of it during the Dover days of which we speak. The special car at the railway station presented every morning a very social appearance, as the members gathered about it, greeting each new arrival with cheers, and sending off special committees to dig out of bed the heavy sleepers. Then these latter would be descried in the distance, hurrying down the street, and cheered by many voices as they came, while the engine tooted and pretended it was going to start, just to enliven them. Everything being ready at last (including the plunder of the baker's shop for the benefit of those who had overslept their breakfast) the "Special" would majestically start. How much superior is this way of doing things to that laborious ancient method called "footing it"—or travelling, as the poet says,

"Leg over leg, as the dog went to Dover"!

Well, Wednesday was the first day, and a glorious day it proved. All the fellows who had dodged the President's address, the night before, were on hand for the excursion, asserting that they had arrived by late trains. The trick was transparent ; but the (late) President, far from feeling resentment on the subject, heartily sympathized with the tricksters, having often wished he could dodge the address himself.

It was after visiting the Canfield, Byram and Dickinson mines, and learnedly discussing the heaves, slides, offsets, shoots, pitches, pinches, phosphoric and sulphurous percentages, etc., of these famous deposits of magnetite, that we reached the hospitable CANFIELD mansion, and resting in its breezy shelter, feasted our eyes on the glories of the CANFIELD collection of minerals—to say nothing of shells, birds and insects. This collection has been made and arranged chiefly with an eye to beauty. One of the proprietors summed up to us a world of practical experience in the remark : "I have usually found that a very pretty specimen is a very good one." This principle, followed through many years, has brought about an almost unique result. The collection is far from complete, systematically ; but it abounds in splendid specimens, particularly from New Jersey localities ; and it is well worth a journey to see it. Evidently the Messrs. CANFIELD are accustomed to be called upon by mineralogists ; for the glass doors are all screwed tight, so that not only moth and rust cannot corrupt, but also (what is equally important) professional collectors cannot break through and borrow !

Then came another trip in the special car, and then the memorable visit to Hacklebarney. Barney is surmised to have been an Irishman, but the united intellect of the company was expended in vain on the conundrum, Who was Hackle ? Whoever he was, his percentage of phosphorus was low, and his percentage of sulphur was so high as to call for roasting—facts from which the theological members inferred that his intellect was weak and his wickedness great !

Our good friend, Mr. RICHARD GEORGE, the Superintendent, beaming with hospitality and professional pride in his splendid mine, explained the mysteries of the formation to an interested crowd of listeners. An observer planted upon the top of the hill, and watching the crowd as it marched from point to point, huddling around his portly figure, might have imagined him to be a brass band or a hand-organ; but the fact is, that the members of the Institute

run after knowledge as other folks do after music; while it may be said of Mr. GEORGE, and many other mining superintendents, whose unwearied courtesy and intimate acquaintance with the country and its industries was placed at the disposal of their guests, that information (as MARK TWAIN says) just oozed out of them like attar of rose out of the otter!

At the Hedges mine, the great sensation of the day was a blast of five holes fired at once, in the bottom of the deep open cut. We notice that the usually accurate reporter of the Dover *Iron Era* says that about fifty tons of ore were blown out by the concussion. This estimate was doubtless formed by an inspection of the heap subsequently; but, as all experts are aware, there is another way of obtaining statistics in such matters, namely, by measuring the amounts of material *in transitu*. A few of us who were inspecting the dumps outside of the mine, and did not anticipate a blast, enjoyed an admirable opportunity to apply this method of calculation, and our estimate varies somewhat from that of the reporter. We think that about 1,000,000 tons of ore came down in small pieces in our immediate neighborhood; and, as we saw it come, to say nothing of receiving some of it personally, we are entitled to belief. Now, if it came down it must have previously gone up—*Q. E. D.* Two learned and enterprising gentlemen, who were industriously collecting specimens for the Centennial Exhibition (which the rest of us kindly helped them carry) were more than satisfied with the amount obtained in this locality. In fact, a fellow scarcely requires to have samples of iron ore actually *pressed upon him* in such abundance!

Thursday morning's excursion to the Hibernia mines was not less agreeable than that of the preceding day. In the mine of the Andover Company a number of the members indulged in an underground expedition. The remark of the Dover reporter, that "to those of the party to whom the sight was new it was a novel one," is profoundly true, though it is reduced somewhat in practical value by the circumstance, that to members of the Institute of Mining Engineers, going underground is not very new, and, therefore, not very novel.

But the crowning glory of the excursions was the delicious trip of Friday. Beginning with the usual grandeur of a special car, the experience of the day was soon lifted to the higher level of a water-party on Hopatcong. The lake was reached by a lovely journey, all too brief, in the special steam yacht of the Institute, through the tranquil tides of the Morris Canal and the stormy breakers of the lock. Just as soon as the American Iron and Steel Association shall have effected sufficient improvement in trade to justify a luxurious indulgence on the part of mining engineers, we mean to set up a commodious yacht on that canal. Why anybody should take the trouble to go to Eygpt and be towed up the Nile, when he could travel through the highlands of New Jersey in a noble vessel drawn by spirited steeds, surrounded by jovial friends who talk English and do not demand backsheesh—passes our comprehension.

The trip through the Sparta mountains to the Hurd, Ford, and Ogden mines, was uproariously enjoyed. The quantity of magnetite in this neighborhood renders the scenery very attractive (to those of the party to whom this remark is new, it will be novel). For a large number of facts bearing on this subject we refer to the Dover report, from which, unfortunately, the exigencies of our limited space have compelled us to strike out most of the descriptions of scenery. They were too lovely for anything; but the printer was inexorable, and they had to go. We made a stand, however, on the passage describing the view from the summit near Ogdensburg, which in common justice could not be omitted. Nor could we consent to spare the allusion to Master DAVIE LYON'S piano playing, which was both a delight and surprise to his listeners. Infant prodigies in music are apt to be mere mechanical performers, whose exhibitions are the results of painful training and are not especially agreeable to us, but DAVIE LYON plays with the expression and feeling of a master.

We must pass with simple mention the visit to Stirling Hill and Franklin, and the courtesies shown to the Institute at both places by Superintendents and Directors. As a matter of course, by the time the party broke up at Franklin, everybody was loaded to desperation with specimens of franklinite, zincite, willemite, fowlerite, and other minerals of zinc, manganese, and iron peculiar to these localities.

About a score of the members, who wished to return to New York, having had a taste of glory, could not submit to the ignominy (and delay) of traveling like ordinary folks upon the regular train. Besides, in the present mixed condition of things, it can hardly be said that there are any regular trains on the Midland road; so the party, after vigorous telegraphing, secured a special train, and ran into Jersey City in style. The memorable experience of riding on the cow-catcher, at the rate of a mile in a minute, was freely indulged in by a number of inquisitive souls. We took our turn with the rest, and enjoyed it so much that we shall never need to repeat the experience. Whenever we wish to quicken our pulse and cause a gentle automatic rising of our remaining locks of hair, we have but to recall, in imagination, the scenes and emotions of that wild episode. Then did we realize, for the first time, how comets feel as they career through space, or how BAYARD TAYLOR may have felt, when, having taken hasheesh, he fancied himself a locomotive. One audacious gentleman remarked, that it was as good as getting drunk—an illustration which we do not understand. We think the most courageous of the party was inwardly relieved that on this occasion the cow-catcher caught no cows!

We should like to dwell at length on innumerable delightful features of these Dover days, reviving in the breasts of all who experienced them with us bright recollections of pleasure unalloyed, and harrowing the recreant souls of all who stayed away with the indelible consciousness of an opportunity forever missed. The older we grow, and the balder we become, and the longer the strike in anthracite and the depression in pig iron continue, the more highly do we prize the release from care and the return to youth afforded by the social intercourse connected with the meetings of the Institute; and we are not the only ones who have registered a solemn resolution, that though fate permit us but three sprees a year, these shall be they. *

NEW PUBLICATIONS.

METALLURGY: *The Art of Extracting Metals from their Ores. By* JOHN PERCY, M. D., F. R. S., F. G. S., *Lecturer on Metallurgy at the Royal School of Mines, London, and to the Advanced Class at the Royal Artillery Institution, Woolwich; Honorary Member of the Institute of Civil Engineers, and of the Society of Engineers, London.* INTRODUCTION, REFRACTORY MATERIALS, AND FUEL, *Revised and greatly enlarged edition, with illustrations, drawn to scale, 112 on wood and 9 on stone.* LONDON: JOHN MURRAY, 1875.

In this octavo of nearly 600 pages, beautifully printed and illustrated, Dr. PERCY has done much to enhance the high reputation which his contributions to technical literature had already earned for him. This volume is complete in itself and is not merely a new edition of his former work. It will be remembered that the first volume of PERCY'S *Metallurgy*, published in 1861, included the subjects of copper, zinc, and brass. All of these are omitted from the present volume, which contains in their place more than three hundred additional pages of fresh matter and several articles on different subjects. Copper, zinc, and brass will be treated in a second volume. The great value of the book before us lies in its admirable general discussion of the principles involved in metallurgy and of the constitution and properties of slags, refractory materials and fuels. A vast amount of information on these subjects is here collected and arranged in such a manner as to evince both industry and intelligent judgment. Dr. PERCY is not afraid to give his own opinion when he differs from other authorities. It is highly important that authors in this department should be able to emancipate themselves from the fetters of authority. A great many propositions have descended to us from earlier generations with the sanction of great names, and are accepted still as axioms, though they are not worthy of the dignity even of theorems. Dr. PERCY might go even further than he does in independence of thought, as, for instance, when on pp. 407 and 408 he quotes from KARSTEN'S *Metallurgy* the direction that charcoal should not be used in blast furnaces or forges immediately after burning, since it will be more effective if kept during two years well under cover, and adds, "I am at a loss to explain why the quality of charcoal should be improved by keeping." It would be easy to explain why the contrary should be the case, and, as a matter of fact, in spite of KARSTEN'S *Metallurgy* and the traditions of the elders, the contrary *is* the case. We would recommend to some of our sanguine fellow-citizens (if their excited hopes have not already apparently been soothed into despair) the perusal of Dr. PERCY'S chapter on the utilization of peat, and the possibility of substituting it for coal in metallurgical and other manufacturing processes. He shows that experience on the Continent proves the possibility of using with success, in some metallurgical operations, a charcoal manufactured from peat, and he also admits that peat may be successfully used (economy apart) for the production of gaseous fuel. Mr. SIEMENS has even gone so far as to say that, aside from the question of cost, he should prefer peat to coal for use in the producers of the regenerative gas furnace. It is not easy at present to set a limit to the applications which may be made in metallurgy of the Siemens furnace and similar apparatus, in which the fuel is gaseous. In the producers of such furnaces not only peat, but also coal slack or culm, sawdust, tan-bark, wood, in short, anything that will burn producing carbonic oxide, may be used. Fuels containing so much water as peat can be employed, when high temperatures are required, only by subjecting the gas to a process which condenses the moisture. LUNDIN'S condenser, in which the gaseous fuel is exposed to a series of descending jets of water, has been successfully employed, in connection with the use of sawdust as a gas generating material, in Sweden, and doubtless could be applied with equal ease to peat. But, on the other hand, Dr. PERCY declares that it is impossible in England, at least, to obtain for a given amount of money enough peat to accomplish nearly as much work as the coal the same money will buy. The cost of the carriage of peat, which is not only much more bulky than coal, but contains, weight for weight, much less combustible matter, and, moreover, involves the transportation and subsequent evaporation of a large quantity of water, is an important element of its cost as a fuel. If the cost of carriage is diminished and the calorific value increased by the artificial drying of the peat where it is mined, the result is a large addition to the cost of production. In view of these circumstances, Dr. PERCY states his conviction that peat can only compete with coal in countries where the cost of production and carriage of peat is relatively very low, and the price of coal is relatively very high; and that, as regards Great Britain, circumstances must greatly change before these favorable conditions for utilizing peat are fulfilled. These considerations are at least equally applicable to the United States; since in this country the rates of labor and of freight are high, and the supplies of coal are so abundant, that its relative scarcity or dearness cannot be permanent.

But perhaps the most valuable part of Dr. PERCY'S book is its very thorough and full discussion of the subjects of coal, wood-charcoal, and coke, with numerous descriptions and drawings of the apparatus employed in the produc-

tion of the two latter fuels. The important topics of the utilization of waste heat and gases also receive attention. There is a complete analytical index at the end of the work. We shall doubtless have occasion many times hereafter to quote facts or opinions from this volume. For the present we must content ourselves with the imperfect notice herewith given, and the record of the judgment that no metallurgist can afford to be without the work, or fail to be glad, if he takes our advice and buys it.

CORRESPONDENCE.

A Search After Vanadium.

TO THE EDITOR: SIR—The technical value of this rare metal in its compounds leads me to call the attention of the readers of your Journal to the probability of its presence in workable proportion in the mixed ores of our Western mining districts.

In a paper published in the Proceedings of the American Academy of Arts and Sciences, for January last, I gave simple processes for detecting and separating its compounds, as found in connection with phosphorus in a large proportion of our common rocks, clays, and even in potable water percolating the strata of gravel deposits.

More extended observations have proved its presence in a great variety of connections, and have shown that the tendency of the metal to form volatile oxychlorides has probably caused it to escape observation in working ores, and even in analytical processes of precision.

Vanadium exists in the calcic salts, formed in the solar evaporation of seawater, and in the incrustations of marine steam boilers; in the ashes from our forest trees; in pearl ash, to which it imparts the "pearl" hue; in alum from clay, and largely in the residuary "mothers" of alum manufacturing; in the residues of zinc reduction, and in the dust of the combustion flues, when oxide is produced. The simple colored minerals contain it, often in considerable proportion; thus wavellite, jefferisite, micas of bronze and brown hues, afford constituent proportions.

It occurs in the protoxide molecules of rocks, in which aluminic compounds exist; less commonly with calcic and magnesic molecules, and is often associated with manganesic salts in rocks. But its congener phosphorus—which itself is found in a large proportion of all rock aggregates—is its best indicator in ores.

Some of your readers will remember a cupreous ore of the Tintic District, Utah, a chalcedonic rock, rendered brown by ferric oxide, generally with green and bluish stains of cupric salts. This ore contains much ferric phosphate, and with this, a large proportion of vanadium. My experiments on a small sample of this ore show that the vanadium compound can be concentrated, and in this way it is probable a workable source of the oxides will be found.

The dust of the flues of roasting furnaces is also a probable source; chlorine, fluorine, bromine, sodine, all render vanadium volatile, and this action may be rendered available in detecting and separating the compounds easily. The uncertainty of the true localities from which my specimens have been taken forbids my naming some promising ores, containing gold and silver, but very complex in composition.

My object in this communication is to interest the skillful metallurgists and mining engineers—who have already carried science and practice so high in our country—in the search after this interesting metal, which occurs almost everywhere in small proportion, and is of great value in industrial applications.

AUG. A. HAYES, M. D.

BROOKLINE, Mass., June 3d, 1875.

The Iron Mines near Dover.

Condensed from the Report, in the Dover *Iron Age*, of the Excursions of the American Institute of Mining Engineers.

WEDNESDAY.

THE morning broke clear and glorious for the excursionists, giving promise of the beautiful day it eventually proved to be. At eight o'clock the party were seated in a special car provided for their use, and after a brief ride, arrived at McCainsville, and were carried over the switch to the Canfield mine. This mine was discovered by Mr. CANFIELD a few years since, and is on what is known as the Dickerson property. The ore is rich, with no phosphorus or sulphur and is used for the manufacture of Bessemer steel. A curious and useful little machine, for preparing specimens of ores, was here noticed. Its merit is that it breaks them without fracturing the piece or part to be retained.

A somewhat laborious walk up the hill brought the excursionists to the Byram mine. This mine is a very old one and is noted as the deepest in the State—it being about 700 feet deep. The fine machinery at this mine was critically reviewed and generally commended. The engine is 350 horse power, and the hoisting and pumping machinery are of the best class. The ore is very rich, and the mine is capable of yielding 2,500 tons per month. It is operated by the Andover Iron Company, Mr. RICHARD GEORGE, Superintendent.

From here the party proceeded to the Dickerson mine, which is undoubtedly one of the oldest in this country, as it can be established by authentic proof that it was worked at least one hundred and forty years ago. In the early days the ore was carried from here on the backs of horses to the forges. The mine is 350 feet deep, the ore is of excellent quality, and the machinery used in working it of the best quality. The yield last month was 700 tons, The mine is operated by the Allentown Iron Company, Mr. JAS. B. LEWIS, Superintendent. After the party had passed for some distance into the tunnel and examined the vein, they repaired to the Canfield family residence near by to view the Canfield collection of minerals.

This collection contains about 2,500 specimens, and is said by competent judges to be one of the most valuable in the United States. It may be said to represent the careful toil and research of at least one life-time. The most rare and beautiful minerals from all parts of the earth are grouped together here in such an artistic manner as to cause the admiration of even the common observer who may know little of their value. The members of the Institute were unsparing in their expressions of delight, and gave the various cabinets as thorough inspection as their limited time would permit. The work of collecting the greater portion of this superb collection was done by the father of the Canfield brothers, and they—Mr. FRED. A. CANFIELD in particular—are constantly adding to its attractions. Besides these were also noticed a large collection of insects made by the late Mr. CANFIELD, a case of birds, and a collection of beautiful shells and marine curiosities by Mr. FRED. A. CANFIELD.

A great many of the specimens are rare and valuable ones from Sussex County, which it would be utterly impossible to replace should they become destroyed by fire or otherwise. As no monetary value can be placed upon them, their loss would be an irreparable one. We are therefore pleased to learn that the owners contemplate erecting at no distant day a fire proof building for their safe keeping.

After a rapid ride of half an hour, the train proceeded slowly over the new Chester Hill branch to Hacklebarney, where all got out again for an inspection of the mines of the Chester Iron Company at this place, of which RICHARD GEORGE, Esq., is the Superintendent.

Mining operations were carried on at this place at least a century ago, and a forge then existed here on the north bank of the Black River. The people there dug the red or surface ore from pits on the lines on both sides of the river, and carted it to the forges. When they would reach the hard ore at the bottom of one of these pits, which it was impracticable to work in the forges, they would abandon it and commence another pit. Thus it seems remarkable that what was unfit prior to thirty years ago for forge purposes, is the most valuable today for furnace purposes.

The excursionists noted first the singular displacement of the lines of veins where they touch the river on each side, and then proceeded to examine the cut on the north side. Here they have just introduced the Ingersoll rock drill. The vein of ore is about fifteen feet in width on this side. Next, the Coal House cut, on the south side of the river, was examined, where the vein is of much greater width, and then the openings on the hill above were inspected. The Chester Iron Company in their mines at this place can produce, should the demand warrant it, from 4,000 to 5,000 tons of ore per month. At present the production is about 1,500 tons per month. The ore is of the same character as that of the Hedges mine, low in phosphorus, and is shipped to the same parties in Pennsylvania, and used by them in the manufacture of Bessemer pig.

After a minute inspection of these mines the party ran back by rail to the Hedges mine, whence the members proceeded to the Chester House for dinner, where they arrived at two o'clock.

The dinner proper was a culinary success, and for this and the unexceptionable manner in which it was served, no little credit is due MESSRS. ELDRED & SKELLENGER, the proprietors, and to the Chester Iron Company, whose guests on this occasion the members of the Institute were. After an hour and a half most pleasantly spent here, the party returned to the Hedges mine, worked by the North Jersey Iron Company, of which Mr. W. J. TAYLOR is President. The excursionists seemed thoroughly pleased with, and took advantage of, the opportunity afforded by the open cut here, to see the workings of the mine. A blast of five holes, made by a rock drill, and charged with giant powder, was fired with an electric battery, and was apparently of much interest to all. About fifty tons of ore were blown out by the concussion, and a storm of fragments of ore was thrown into the air to a height of at least one hundred and fifty feet. The fine and economically arranged machinery of this mine appeared also to elicit considerable favorable comment.

THURSDAY.

At eight o'clock in the morning the party left Dover in their special car, and proceeded to the junction of the Hibernia Mine Railroad, from which point they were conveyed by the engine of the Hibernia road to Hibernia, where the greater part of the forenoon was spent in examining the celebrated Hibernia mines in the hill on the north-west.

These mines were worked before the Revolutionary War by the old London Iron Company, which also owned a forge and furnace, located in the valley above Lower Hibernia, where cannon balls were, at one period of that war, made for the use of the English army. There are none living who can recollect ever having seen this old furnace, but the salamander is yet to be seen at its old site, and cannon balls there made are occasionally picked up.

Commencing at the bottom of the hill, and running north-west, the Andover Iron Company are the possessors of about 1,000 feet of the vein, which they work. Then follow the continuous tracts of the Glendon Iron Company, and still further on the property of the Bethlehem Iron Company, making in all about one mile of the vein worked in this hill. Commencing at the bottom of the hill is a tunnel about one-half of a mile in length, running through the Andover and Glendon Companies, which is used by the former for bringing out ore, and by both for carrying off the water which accumulates above the level of this tunnel. The level of this tunnel is about 300 feet below the summit of the hill, and some of the shafts are sunk 175 feet below the level of the tunnel. Below the level there is not much water, making but little pumping necessary; indeed, it is a peculiarity of the mines in this section, with the exception of the Byram, that the water usually comes from within 150 feet of the surface. The vein through these properties is very irregular in width. In some places it is as wide as fourteen feet, in others as narrow as a foot and a half; but the average width is thought to be about six feet. Above the level the ore is taken out in both the Glendon and Andover properties, with the exception of a block in the Glendon, which is kept for reserve. The quality of the ore is quite uniform, and excellent all the way through.

The Glendon Iron Company's mines are said to be among the best laid out iron mines in the United States, and their machinery is of the best order. They are mining now a little over 2,000 tons of ore per month, but it is said that their mines would yield, if worked to their fullest capacity, more than three times as much.

The Andover Iron Company's mines are also in fine and systematic condition for working, and their machinery and appliances for raising ore are first-class. At present they are mining about 2,000 tons per month, and will raise from 35,000 to 37,000 tons per year in ordinary times. Their engines are located near the mouth of the tunnel, and with the aid of wire ropes running from the same, operated by friction gear, the ore is hoisted from the shafts to the level and dumped into cars, and the cars are drawn up the slope to the level at the same time. The loaded cars are then run out of the tunnel upon a trestle, from which they are dumped into the cars of the railroad, which runs beneath.

The company, after examining the large heaps of stock ore on the bank (one of which, belonging to the Glendon Iron Company, is said to contain nearly 10,000 tons) proceeded to the mouth of the tunnel, and many of them entered the Andover section upon an exploration, in the course of which they went down one slope until they were nearly 300 feet below the surface of the hill. To those of the party to whom the sight was new, it was a novel one—and the flickering lamps and weird appearance of the scene produced a marked effect.

We may here remark that Mr. RICHARD GEORGE, the Superintendent of the Company, is engaged in constructing a new slope at the mouth of the tunnel, which will greatly facilitate the work of raising ore.

FRIDAY.

The morning of the last day opened as gloriously for the excursionists as its

predecessors. The party, in their special car, left Dover at half-past seven o'clock, and twenty minutes later arrived at Hopatcong station, where they soon boarded the steamer "Stella," and passing slowly up the canal, through the feeder and lock, launched out on the broad bosom of Hopatcong, the most beautiful of New Jersey lakes. They disembarked at Nolan's Point, the terminus of the Ogden Mine Railroad, from which point the ores of the mines along that road are transferred from the cars to the canal boats and taken across the Lake to the Morris Canal by steam tugs.

Here another special train awaited them, furnished by President GEORGE RICHARDS, and Superintendent H. W. CORTRIGHT. This road is ten miles in length and runs from the Ogden Mines to the lake, winding its way the entire distance through the wild scenery of the Sparta mountains, only relieved here and there by mining settlements. The first three miles over the road are very quickly made, and we alight at the Hurd mine, at Hurdtown, the property of the Glendon Iron Company, GEORGE RICHARDS, Superintendent. The ore of this mine is one of the finest, averaging about 65 per cent. of pure metal, and of such a quality as to make it available for use in the Bessemer process—it containing probably not one-half of one per cent. of sulphur. Added to the richness of the ore, another advantage derived by the owners of the mine is the ease and cheapness with which it is raised. The trouble arising from water, which in some mines is one of the greatest items of expense, in this mine is so small that only a ten-inch pump, with short stroke, is used, which is worked but about half the time, and slow at that. The mine is also simply and cheaply worked by a single slope, said to be the longest in the State, out of which the ore is drawn in cars by an unusually powerful engine. At present they are working about five hundred feet below the surface and twelve hundred feet upon the slope. The vein at present is from eight to ten feet wide, but is variable in size, and averages in some place twenty feet. The ore, which is easily drilled, in many instances presents a beautifully polished surface, having the appearance of having been rubbed, which is attributed to the action of the water running through the seams. The mine, as worked at present, produces about 2,500 tons of ore per month, and there are upon the bank 23,500 tons—a rich mass unexcelled by any in the State. We may here state that the large amounts of ores stored on the banks at the mines along this road are not due entirely to the depressing effects of the panic, but to the fact that for the shipment of their ores they depend upon water navigation, which being closed in the Winter causes the ore to accumulate, although the quantity is greater than usual at this season, as some ore was left over at the close of navigation last Fall.

After another brisk run of two miles, we arrived at the Ford Mine, situate five miles distant from Nolan's Point. The greatest feature here to many of the party was the superb machinery, erected under the supervision of Mr. JOHN R. PETERS, Superintendent of the Musconetcong Iron Company, the operators of the mine. The mine was first worked by the Glendon Iron Company, some fifteen to sixteen years ago, from whom it was transferred to the Musconetcong Iron Company. The mine is now about 200 feet deep, and is opened 500 feet in length. The vein is an unusually wide one, averaging about 12 ft. in width, while the ore, which is of excellent quality, will yield in the furnace over 50 per cent., and will probably analyze 55 per cent. The quantity mined at present is about 2,000 tons per month, but the capacity of the mine would be about from 4,000 to 5,000 tons for the same time, if such an amount was required. The machinery has been entirely renewed within the past two years, with a view both to the greatest economy and utility. Instead of the high-pressure engines generally used about here, they have a compound engine, and a combined surface and jet condenser, the object of the surface condenser being to obtain pure water for use in the boilers. Owing to the quantity of water in this mine the best pumping machinery is needed and used. The pumping is done with two plunger pumps—one 10-inch and the other 12-inch—ordinarily run with 7 or 8 ten-feet strokes per minute, and raising in the Spring and Fall from 10 to 13 barrels of water per minute. In Summer and Winter the quantity, of course, is less. These pumps are worked incessantly night and day all through the year. Two hoisting machines are located at the shaft, and the power is conveyed to them from the engine house, 400 feet distant, by half-inch steel wire ropes, over rubber-lined pulleys 6 feet in diameter—the ropes running at a velocity of 1,800 feet per minute. The machines at the shaft are worked with friction gear.

This Company have also provided many facilities for their miners, for the purpose of getting good men here, and keeping them, which they have accomplished to such an extent that the character of the community has been completely transformed in the last few years. Among these improvements may be mentioned a sort of Croton water arrangement for supplying the miners' houses with water, which is very pure, is drawn from an unused part of the mine, and supplied to the houses through non-freezing pumps, which make them able to obtain it in Winter as well as Summer.

For breaking their ores they employ three Burleigh rock drills—one large and two of medium size—and use from 400 lb. to 500 lb. of Giant powder per month. In blasting, they fire by means of an electric battery, when practicable. On the bank at this mine there are now over 10,000 tons of ore in stock.

Taking our seats in the cars again, we ride through five miles more of mountain scenery, and then alight at the termination of the road—the Ogden mines, located in Sparta township, Sussex County. We notice first the old, and now abandoned, Ogden mine, worked, in 1772, by Col. OGDEN, a Revolutionary patriot. The Ogden mine property, embracing 25,000 acres of land, is owned by the Ogden Iron Company, of which GEORGE RICHARDS is President. In the center of the large tract, however, are three smaller tracts—two of 100 acres each, and one of 200 acres—belonging to other Companies, the two smaller ones being the properties of the Lehigh and Sussex Companies. The first mine of importance is the Roberts mine, located on the North side of the railroad, and leased of the Ogden Iron Company, and operated by the Allentown Rolling Mill Company, THOMAS MALEY, Superintendent. This Company have about 20,000 tons of ore in stock here, and are raising about 1,500 tons per month at present. Their capacity is about double this amount, did the demand warrant it. They are working, at present, about 500 feet on the vein, which varies from 15 to 20 feet in width; the shafts are down about 185 feet. The ore averages 50 per cent. of pure iron, is free from impurities, and can be used in charcoal furnaces.

On this vein going North, and adjoining the Roberts mine, is the Pardee mine, also leased of the Ogden Iron Company, and worked by the Musconetcong Iron Company. It is now nearly 300 feet deep, is opened 100 feet in length, and yields about 1,000 tons of ore per month, which will be increased as the mine is lengthened. The ore is of the same character as the Roberts, and will yield over 50 per cent. of metallic iron in the furnace.

South of the railroad, on the Ogden mine tract, several mines have recently been worked for B. LE VAN. On the South side is also the Davenport mine, which is not worked at present. Farther still to the South, Messrs. W. S. DE CAMP and E. H. MORRISON, of Powerville, holding a half interest with the Coleraine Iron Company, have made fourteen openings recently, in eleven of which they have found ore. It is patent that a large body of ore exists at this point, which makes excellent wrought iron.

After a brief inspection of the mines at this place, the party clamber into the wagons provided for conveying them to Ogdensburg, and start on their journey by a magnificent wagon road, built at a great expense some years before the construction of the railroad, for carting away the ore from this place. The whole trip thus far has been one of delightful scenic surprises to most of the party, but this is the greatest of them all. We are on the highest point in the State, and after a few minutes' ride, we come out upon the mountain side, and the magnificent Wallkill Valley, directly below us, bursts upon astonished eyes in all its splendor. Farms, lakes, uplands and lowlands, woods and meadows are spread out before us for miles in vernal beauty. Far across is the Blue Mountain range, reposing lazily in a bank of haze, while far down to the right, and at least twenty-five miles distant, may be faintly discerned the twin peaks of Mounts Adam and Eve, standing like giant sentinels to keep watch and ward over this fairest of all our fair valleys. Turning to nearer objects, we get a splendid view of Franklin and Stirling Hill; the heavy embankments of the Midland Railroad look small in comparison to their real size, while the Wallkill, gleaming in the sun and flowing through richest pastures, looks like a silver ribbon bordered with rarest green velvet. As we pass down the wooded side, many points of admiration are noted, among them a little gem of a cascade at the mouth of a glen, which caused many expressions of delight.

The termination of this romantic ride brings us to the Lyon House, Ogdensburg, kept by D. F. LYON, where we alight for dinner. While waiting the party take possession of the parlor and are regaled with several performances on the piano by Master DAVIE LYON, son of the proprietor, a lad about 12 years of age, who has appeared several times at Steinway Hall, New York, and has created considerable interest in the best musical circles of the metropolis by his exquisite playing. He was loudly applauded for his solos, as was also a duet in which his sister assisted.

After the dinner—a very creditable one—the wagons were again occupied, and we proceeded to Stirling Hill, the locality of the mines and crushing works of the Passaic Zinc Company. The Zinc Mines of this section are noted as the only ones in the world where red oxide of zinc is found. They are also noted as being the best place in the country for procuring rare specimens of minerals—there being over fifty different varieties of minerals found in this hill alone, from which a great many of the choicest specimens in the Canfield collection are taken. The white silicate and red oxide of zinc ores mined here are mixed with franklinite, are crushed in the mammoth crushing works at the mouth of the mines, and sent to the Company's own furnaces at Jersey City, at which place they are also erecting rolling mills. These crushing works are not in operation now; but they are remarkable for their ponderous machinery and the rapidity with which they do the work required. The ore is first crushed fine, and passed to revolving tables, upon which a stream of water is passed, which carries off the limestone waste and conveys it through the troughs to the meadow below. The zinc is manufactured into paint and spelter, and the residue of the mineral into spiegeleisen, which can be made harder than the finest Damascus steel, and is used in the manufacture of Herring's Safes, which are impossible for burglars to drill because of the hardness of this metal. In the rear of the works the company have a front and a back vein on two ridges of red oxide ore. Mr. T. MARSHALL, the Superintendent, while engaged two weeks since in constructing a tunnel from the bottom of the front vein, 180 feet deep, across to the back vein, struck a large deposit of white silicate of zinc, which they are now working. The structure at this mine, and at the New Jersey Zinc Company's Mine at Franklin is much the same as of the iron beds, the zinc stratum lying on the edge between the almost vertical layers of crystalline limestone which abound in the metamorphic rocks of this western mineral belt. Some of the more open cuts exhibit an extremely picturesque and beautiful appearance, the rocks being very showy, and presenting a variety of colors and forms. The larger portion of the gangue is everywhere a variety of calcite in which the carbonate of lime is replaced by carbonate of manganese. Disseminated through this, but not uniformly, are the minerals which carry the zinc, the most important of which are franklinite, red oxide of zinc and silica of zinc. This ore will produce about 35 per cent. of zinc and 30 per cent. of iron. At Stirling Hill, franklinite abounds in great masses. After an hour spent in viewing the mine, and procuring some of the handsome specimens to be found here, we start for Franklin, in company with the Directors of the New Jersey Zinc Company.

At Franklin, the vein, which is 50 feet wide, runs first green silicate, then red oxyde, and then a little vein of carbonate. Next to this comes a vein of brown oxyde ten feet wide—forming truly a wondrous and valuable deposit. These various colored ores, which are beautiful in appearance, are about the same in quality, differing only in color. This mine is not worked to a very great extent at present because of the coal strike which deprives the furnaces of Lehigh coal. Only about 13 or 14 men are employed just now, but so convenient are all the arrangements here that with this limited force they can mine 1,000 tons of this valuable ore per month, which is sent to the New Jersey Zinc Works at Newark.

After visiting this point the excursion breaks up.

All in all the excursion was perhaps the best one of any kind ever held in this vicinity, and many expressions were heard from the members that it was in all respects the best meeting the Institute had thus far held. Among the gentlemen of this vicinity who participated in the last day's excursion were Messrs. GEO. RICHARDS, RICHARD GEORGE, A. C. CANFIELD, F. A. CANFIELD, JOHN R. PETERS, JAS. B. LEWIS, E. S. MOFFATT, and S. D. KYNOR of Dover, Hon. E. D. HALSEY of Rockaway, and Messrs. W. S. DECAMP and E. H. MORRISON of Powerville. The local committee of arrangements was Messrs. E. S. MOFFATT and E. and F. A. CANFIELD. Owing to illness, Mr. E. CANFIELD was unable to act, but his associates did their work so well that in every particular the meeting of the Institute with us was a perfect success, without a single drawback or unfortunate occurrence to hinder or mar the proceedings.

During their stay in Dover the members stopped at the Mansion House, where Mr. JOLLEY catered to their wants in such an acceptable manner as to greatly increase the reputation he has enjoyed for many years of being one of the most successful and popular hosts of the State.

The Water supply at the Centennial.—The Centennial Board of Finance have accepted the proposition of HENRY WORTHINGTON & Sons, of New York, to furnish a six million gallon pumping machine, boiler and engine, free of cost, to pump the water from the Schuylkill to be used at the Centennial.

The Sum of Heat Utilized in Smelting Cleveland Ironstone.*

MR. BELL said that his observations would be almost exclusively confined to the work performed in the blast-furnace itself. He had previously given his opinion that about a third, or a trifle less, of the carbon, as it exists in the best South Durham Coke, escaped as carbonic acid. Adopting 30·4 per cent. as the loss of carbon in this condition, the combustion of the fuel represented 51·27 per cent. of its heating power. The remainder left the tunnel head undeveloped. It was to inquire into the extent to which this undeveloped fuel was utilized that his paper was devoted. Mr. BELL then entered into calculations showing that, taking the heat evolved by the combustion as effected in the furnace, there remained only 4,693 heat-units per unit of iron capable of being generated by the inflammable matter contained in the gas. In fact, there were only 3,950 units really absorbed in the smelting process, and 4,693 capable of being furnished by the gases, and of the total heating power of the coke, 45·7 per cent. was all that was really utilized in the furnace. Mr. BELL then proceeded to examine how far they availed themselves of the 4,693 heat-units which the waste gases were capable of supplying. Having accounted for the loss of some of this by waste in water, steam, etc., which absorbed 2,000 out of 4,693 heat-units, he showed that their heating medium, viz., carbonic oxide, existed in a very unfavorable condition for economical application, and traced the sources of waste to three things—the fuel being in the form of a gas highly diluted with incombustible gases, imperfect combustion, and the temperature at which the products from the boiler and hot-air stoves reached the chimney. He had known the fall of temperature in the gases between the furnace and the point at which they were burnt to amount to 180° Fah., and as much as 25 per cent. of the combustible carbonic oxide arrive at the chimney without being burnt. A far more common source of loss, however, was the admission of too much air. The unnecessarily high temperature also of the gaseous contents of their boiler and stove chimneys proved conclusively that the waste arising from that cause —44 per cent. of the whole—was due to the want of proper construction in their boilers and hot-blast pipes. This had been conclusively proved by recent experience at the Clarence Works. Arrangements were consequently made, by which the temperature of the gases, as they left the boilers, was reduced from 1,607° to 770° Fah. The heating stoves were divided into compartments, and the feed water heated by the waste gases, to produce these results. The total result was as follows: Available heat in the furnace gases, 4,693 heat-units. This was disposed thus: Loss in the sensible heat of tubes, 166; heat in the steam and hot-blast, 2,000; loss at chimneys, 1,083; loss from radiation, etc., at boilers and stoves, 812; total, 4,061; showing an excess of 632. In conclusion, Mr. BELL said he was not prepared to say that these figures exhibited a correct statement of the excess. It was, however, important to know that, whereas at the older Clarence furnaces they always, as a rule, required to supplement the heat afforded by the coal gases, at the new side, not only was none now required, but there was a constant escape of gas from an aperture provided for the purpose. Although a very correct statement of figures in the present case was impossible, he still thought he had furnished sufficient proof to show that the calorific power of their waste gases was sufficient, and did suffice, for raising all the steam and heating all the air their furnaces required. He hoped he had also proved that when these failed to do that, it was due either to defective apparatus, or to carelessness in the management of the process.

MR. SNELUS observed that they had some mechanically-fired boilers from which they did not obtain the results they were entitled to from the consumption of fuel; the conclusion was arrived at that the great waste was caused by admitting too much air, and alterations were made which reduced the consumption of fuel enormously. In the blast-furnaces a large waste was taking place from the same cause.

MR. COWPER was building a good many fire-brick stoves, and he found the loss by combustion lowered very much.

MR. LANCASTER had seen the furnace just described, and thought it was a complete answer to any objection to close-top furnaces, as less coal was used, and there was added the improvement of gas.

* A paper read by I. LOWTHIAN BELL, before the Iron and Steel Institute of Great Britain.

Notes.

Coal in Brazil.—The *Brazil and River Plata Mail* says that a considerable deposite of coal has been discovered in the province of Rio Grande do Sul, by the manager of the Jeronyma collieries. It appears that the coal is equal to the best quality of English Coal, and instructions have been given for proving this new bed, the discovery of which will be of immense importance to Brazil.

Coal in Canada.—Several horizontal coal-beds have been found in the progress of the geological survey of Canada on the North Saskatchewan river, between Edmonton and Rocky Mountain House. One bed was from 18 ft. to 20 ft. and favorable for working. The coal here is superior to that in the second Appelle Valley. The coalfield is said to extend to the Athabasca river on the north, if not further, and to Red Deer river on the south. The area is reckoned as 25,000 square miles.

Concentrating Machinery for Nevada and Colorado.—S. R. KROM shipped, on the 17th and 18th of May, the entire machinery for two concentrating works, comprising jaw crushers, steel crushing rollers, sizing screens, concentrators, elevators, shafting, hangers, pulleys, belting, etc. Each machine will be capable of crushing and concentrating 50 tons in twenty hours. The Manhattan Silver Mining Co. are putting up one of the mills at Austin, Nevada, and JOHN O. EARLE, Esq., of San Francisco, the other at Salena, Nevada. Concentration works on Krom's system will also be erected in Colorado this summer.

Exports of Coal from Great Britain.—From Messrs. J. P. HIGGINSON & Co.'s circular, we learn that the exports of coal from Great Britain, from January to April, inclusive, were 3,336,853 tons, as compared with 3,638,890 tons for the corresponding period of last year; showing a decrease this year of 302,037 tons. The following exports were made during the same period to the following countries:

	1875.	1874.
United States	30,020	19,170
West Indies	134,691	124,227
South America	291,983	275,467
Total	456,694	418,864

The exports to the United States this year, were: 1,666 tons to New Haven; 8,404 tons to New York; 1,820 to Philadelphia; and 18,130 tons to San Francisco. Much of this coal was shipped as ballast on vessel's account, and the prices realized were generally so very low that it is more than probable the ventures resulted in loss. The bulk of the last cargo sold on this market, which was Wishaw steam (Scotch) coal, realized but $4 25 per ton, which must have been less than cost and expenses.

The History of the Petroleum Industry—The early history of petroleum is curious. Known and employed for burning from remote antiquity in the Old World, no process for its purification had been devised, and it was, therefore, at best but an indifferent and cheaper substitute for animal and vegetable oils. The first attempts to refine it for commercial purposes are believed to have been made by YOUNG, of Glasgow, in 1847, on petroleum got from Derbyshire, in England, from which he prepared a lubricating oil, and it was the exhaustion of this supply which led him to improve the methods for the extraction of oils from coal. Meanwhile, in the United States, the existence of sources of mineral oil had been known to the Indians of New York and Pennsylvania, who prized it as a medicine, for which purpose it became familiar to the early European colonists under the name of Seneca-oil. It appears to have been an object of research to the aborigines, ages ago, since in the oil regions of Western Pennsylvania are found pits, or wells, apparently dug for the purpose of collecting the oil, carefully timbered, and affording, from the growth of the forest upon the site, evidences of an antiquity of from 500 to 1,000 years. As early as 1819, in boring for brine on the Muskingum River, in Ohio, from a depth of 400 feet were obtained large quantities of mineral oil, which was a source of great annoyance to the salt-makers. At this time attempts were made to use the oil for illumination, but, from the want of proper lamps, it was not found to be adapted to the purpose. In 1854, the successful manufacture of oils from coal caused attention to be drawn to the possibility of utilizing these native oils, and the Pennsylvania Oil Company was formed for the purpose of manufacturing the petroleum found at Oil Creek, in Venango County, Pennsylvania. The chemical investigation of the material was committed to Prof. B. SILLIMAN, Jr.; and his report to the Company, which appeared in April, 1855, has been the point of departure for the immense industry of petroleum which has grown up within the last twenty years. In this report was described the conversion of the crude petroleum by fractional distillation into products differing in density and in volatility, the manufacture from it of a burning oil of great illuminating power, of an oil capable of supporting a low temperature and fitted for lubrication, and also of paraffine. He further showed the importance of distillation in a current of highly heated steam, and noticed the breaking-up of heavier into lighter oils by continued heat—processes which have since assumed a great importance in the manufacture of petroleum.—T. STERRY HUNT (First Century Series), in *Harper's Magazine for June.*

STATISTICS OF COAL PRODUCTION.

This is the only report published that gives full and accurate returns of the production of our Anthracite mines.

Comparative Statement for the week ending June 5:

	1875.		1874.	
	Week.	Year.*	Week.	Year.
Wyoming Region.				
D. and H. Canal Co.	78,260	1,310,195	56,306	1,071,898
D. L. and W. RR. Co	88,632	1,340,366	65,892	1,106,431
Penn. Coal Co.	34,325	517,190	31,085	509,838
L. V. RR. Co.	8,882	354,385	19,550	432,992
P. and N. Y. RR. Co.	3,269	41,253	1,331	31,212
C. Rit. of N. J.	18,179	181,028	30,401	560,461
Penn. Canal	..	..	..	..
Lack. and B. RR.	..	59,546	.	87.718
	231,547	3,803,963	204,565	3,800,550
Lehigh Region.				
L. V. RR. Co.	7,555	167,254	67,013	1,302,012
C. RR. of N. J.	1,333	6,958	21,887	418,547
D. H. and W. B. RR.	994	23,452	669	9,480
	9,882	197,668	89,569	1,730,029
Schuylkill Region				
P. and R. R. RR. Co.	35,038	504,758	120,402	1,996,808
Shamokin and Lykens Val.	32,351	418,424	18,007	307,232
	67,389	923,182	138,409	2,304,040
Sullivan Region.				
Sul. and Erie RR. Co	..	5,419	..	11,512
Total	308,818	4,930,232	432,543	7,846,131
Increase	..	..	..	..
Decrease	123,725	2,915,899	..	..

* Year beginning January 1st.

The above table does not include the amount of coal consumed and sold at the mines, which is about seven per cent. of the whole production.

The following table does not give the entire production of our bituminous mines, but it is by far the fullest report published.

The Production of Bituminous Coal for the week ending June 5, was as follows:

Tons of 2000 lb., except where otherwise designated.

	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Tons of 2240 lb.	65,668	828,964
Barclay Region, Pa.		
Barclay R.R. tons of 2240 lb.	6,665	117,163
Broad Top Region, Pa.		
Huntingdon & Broad Top R.R.	5,308	92,829
*East Broad Top	396	19,541
Clearfield, Region, Pa.		
*Snow Shoe	259	33,696
*Tyrone and Clearfield	7,068	310,929
Allegheny Region, Pa.		
*Pennsylvania R.R.	1,848	107,618
Pittsburgh Region, Pa.		
*West Penn. R.R.	1,798	87,069
*Southwest Penn. R.R.	92	3,901
*Penn. and Westmoreland gas coal, Pa. RR	3,172	176,126
*Pennsylvania R.R.	4,504	146,986
Kanawha Region, W. Va.		
Chesapeake and Ohio R.R.	4,700	60,457

* To May 21.

The Production of Coke for the week ending May 28.

Tons of 2000 lb.

	Week. Tons.	Year. Tons.
Tyrone and Clearfield	..	273
Alleghany Region	..	53
West Penn. R.R.	360	21,955
Southwest Penn. R.R.	4,082	204,041
Gas Coal, Penn. R.R.	165	10,600
Pittsburgh Coal, Penn. R.R.	891	39,636

The receipts at Buffalo, via. L. S. & M. S. R.R. for the week were 4,499 tons, and by Lake 178 tons. The exports by Lake were 15,564 tons, and imports 470 tons.

The exports of coal from Baltimore for the week were 1,439 tons, and for the year, 2,3,064 as compared with 49,784 tons to the corresponding time in 1874.

The decrease of shipments of Cumberland coal over the Cumberland Branch, and Cumberland and Pennsylvania Railroads, amounts to 50,502 tons.

Belvidere Delaware RR. report:

	week.	year 1875.	year 1874.
The receipts of coal at Coal Port (Trenton)	..	206	101,170
" " " South Amboy	..	19,801	301,192
Shipments at Coal Port (Trenton)	..	196	100,268
" South Amboy	102	97.914	258,347

Receipts at Greenwich, Philadelphia:

	Bituminous.	Gas Coals.
Receipts	6,278	3,015
Shipments	5,265	3,330
On hand	1,629	135

The receipts at Port Richmond for the week were 7,500 tons, shipments 6,500 tons, and balance on hand 4,500 tons.

Shipments from Pictou, N. S.

	tons. week.	year.
To United States	1183	1618
" West Indies	—	—
" South America	—	—
" Canada	2950	5050
" Other Provinces	2264	3465
	6397	10,733

Shipments from the Block House, Cow Bay, C. B., to the following destinations:

	week.	year.
Provinces	637	2377
West Indies	—	486
	637	2863

Production of Bituminous Coal, 1875.

Tons of 2000 lb.	Previous.	April.	Total.
Blossburgh Region	69,796	30,554	100,350
Barclay Region	80,474	22,512	102,986
McIntyre Coal Co	15,807	7,102	22,909
Broad-Top Region	47,747	15,712	63,459
Cumberland Region	288,602	277,321	565,923
East Broad Top	7,198	6,074	13,272
Snow Shoe	19,384	8,324	27,708
Clearfield Region	198,013	62,469	260,482
Alleghany Region	44,108	28,488	72,596
Pittsburgh Region.			
West Penn. RR	46,255	20,043	66,298
Southwest Penn. RR	1,484	963	2,447
Gas Coal, Penn. RR	148,198	6,588	154,786
Pittsburgh Coal, Penn. RR	64,593	35,367	99,960
Saw Mill Run RR	12,283	11,996	24,279
Cleveland and Pittsburgh RR	73,579	33,176	106,755
Pittsburgh, Cincinnati and St. Louis RR	184,347	51,930	236,277
Erie and Pittsburgh RR	23,877	4,748	28,625
Pittsburgh, Fort Wayne and Chicago RR	51,381	23,435	74,816
Pittsb'g. & Castle Shannon RR	16,732	12,271	29,003
A. V. & P. R.R	1,001	275	1,276
Pittsburgh and Connellsville RR	81,119	..	81,119
Monongahela Nav. Co	..	..	..
Keeling & Co	26,896	..	26,896
Wettengell & Gormley	6,797	..	6,797
J. W. Carlin & Co	..	..	..
Pittsburgh Va. & C. R.R	9,747	2,457	12,204
Allegheny Valley R.R	92,681	..	92,681
Gray & Bell	3,461	..	3,461
St. Louis Region.			
St. L. A. & T. H. R. R. and Branches	95,064	..	95,064
Illinois and St. Louis	..	..	..
Indiana North and South RR	264	..	264
Evansville & Crawfordsville RR	7,634	1,895	9,529
Ohio & Mississippi RR	39,696	..	39,696
Sewanee Region.			
Tenn. Coal & R.R. Co	18,239	8,846	27,085
Kanawha Region.			
Chesapeake and Ohio RR	13,982	30,005	43,987
Warrior Region, Ala.			
South and North Alabama RR	10,720	2,999	13,719
Cahaba Region, Ala.			
South and North Alabama RR	4,490	660	5,150
S. R. & D. R.R	3,471	..	3,471
Chicago B. & Q. R.R	109,819	32,644	142,463
B. & M. R.; R.R	22,774	6,070	28,844
Union Pacific R. R	61,369	..	61,369
Keokuk & Des Moines R. R	..	..	..
Lenver & Rio Grande	6,982	1,696	8,678
Cairo & St. Louis	3,106	..	3,106
	2,013,170	746,620	2,759,790

COAL TRADE REVIEW.

Duties.

Anthracite free. *Bituminous*, per ton of 28 bushels, 80 lb. to the bushel, 75c., gold.

All *slack*, or *culm*, such as will pass through a half-inch screen, per ton of 28 bushels, 80 lb. per bushel, 40c., gold.
Not otherwise provided for, per ton, 40c. gold.

NEW YORK, Friday Evening, June 11, 1875.

Anthracite.

The demand is reported as slacking up considerably, and shipments are being made with much more dispatch. Speculators are not realizing more than circular rates on any sizes, and on some they are compelled to make concessions. The companies, however, are firmly maintaining their prices, and are fully engaged supplying their regular contractors. The output is steadily increasing, having reached 308,818 tons last week, which, however, is still 123,725 tons less than during the corresponding week of last year. The decrease since January 1st, as compared with last year, is 2,915,899 tons.

The Anthracite Miners' Strike.—During the past week there has been quite an accession to the number of men at work; miners have resumed work in small bands, and a number of additional collieries have resumed operations. The Philadelphia and Reading Coal and Iron Company have eight collieries at work, and anticipate to be able to start more by the first of next week. The Lehigh and Wilkes-Barre Coal Company, learning that a number of their men were anxious to resume, guaranteed them protection to enter their Diamond mine; but yesterday morning, when Mr. PARRISH, with a police force, met a large body of men at the shaft-house, only three expressed a willingness to work. It is supposed that many others were willing to work, but from fear of being pronounced "black-legs," and treated as such by the miners on strike, they held their peace or voted to continue the strike. We were pleased to see that there were at least three who had enough manhood to express their true desires. Advices from the Lehigh Region do not indicate that there will be much work done before the first of next month. The indications are that a vote will not be taken to resume work, but that the number at work will be constantly increased, until those idle will be so small a body as to make it folly to attempt further resistance. This will be bad policy for the Union leaders, for, with a vote to resume, they would still maintain their organization, while by their stubbornness they will compel the greater portion of the men to break from it, and so disorganize their forces as to have much difficulty in collecting them again, should they wish to resume the battle after recuperation. The Wilkes-Barre correspondent of the Scranton *Times* says:

"Mr. James O'Halloran, who has performed the duties of county organizer of the Miners' National Association in this region for some time past no longer fills the position, as the association has dispensed with all their county organizers throughout the country, and hereafter the local organizations will be formed by a selection of miners who will receive no compensation for their services. Mr. O'Halloran's pay has been at the rate of $1,200 per year and traveling expenses, which made the position quite a lucrative one, and he will doubtless deplore the change."

This is an evidence that the miners are regaining their senses, for it seems that it is the height of folly to engage agitators to make the men believe what their own judgment tells them is not true. The actual evidences are contrary to the past arguments of the agitators, and there is a doubt of the ability of these leaders to so easily engage the men again in the early future. The week has been a very quiet one, only one attempt at outrage coming to our notice, and that being an attempt to burn the breaker at Mr. CHAS. HUTCHINSON'S colliery, Kingston.

Bituminous.

In the Cumberland trade there is nothing to note except that the demand is not quite so brisk. Many of the companies, however, have order books very well filled and are shipping to their utmost capacity. The shipments are greater than during the corresponding time last year, and the deficit in the out-put this year, as compared with last year, is being constantly decreased until now it is but about 50,000 tons. Foreign shipments are light and not one-half of what they were at the corresponding date of last year. English coals are being put into South America and the West Indies at such very low rates as to exclude Cumberland.

The Clearfield Region is constantly increasing its production, although it is putting out but from one-half to three-quarters of its usual production, which is the result of the late fires and strikes which have somewhat disorganized the business. It is thought, however, that the regular out-put will be reached by the first of next month. A glance over the order books of the companies shows that this coal is gaining considerable popularity, with steamship companies, railroads, sugar refineries, general manufacturing establishments, and for smiths' use. The nominal quotations are $5 25@$5 35 per ton at South Amboy, and we are led to believe that the market is met where other coal are placed in competition with it. The order books of most of the companies are well supplied for the time being, but will require additional orders to keep them busy during the whole season. We notice the first arrival of Bell's Gap coal in this market. The Company has increased its facilities of production, and will hereafter make regular shipments to this market.

The Broad Top Region is very busily engaged. The coal of this region is receiving considerable attention from general users of steam. We note a sale of 10,000 tons, during the week, on private terms. The nominal quotation is $5 25 South Amboy.

Foreign and Gas Coals.—There have been no further arrivals of foreign coal. The gas coal trade is very quiet, the business doing being on account of orders taken early in the season. There are enough miners at work in the gas coal districts of South-western Pennsylvania to meet the requirements of the market.

Freight. The market is very depressed. The rate from this post to Boston continues at $1 per ton, and other ports in proportion. We note a charter to Richmond, Va., at 90c. From Baltimore and Georgetown the same depression, noticed for several weeks, continues, and rates are without noticeable change.

Philadelphia Coal Trade.

June 11, 1875.

It was thought a few days ago that the insane strike in the Lehigh and Schuylkill Regions was over, but it seems that it will take some time yet to convince the workingmen of the great mistake they have made in trying to impose terms on their employers at a time of general prostration of business, and when workingmen in every other branch of trade have submitted to reductions which were absolutely necessary on their part in order to secure any work at all.

The trade for such coals as are mined is dull—purchasers preferring to wait for the varieties of coal which are most suitable for their particular purposes—and every rumor of an early resumption tends to render them more confined in their purchases.

Freights rule at $1 50 to Boston, and $1 25 to Rhode Island. To Southern ports rates are very low; 70c. to 75c. for Richmond and Norfolk, and 80c. to 85c. to Washington and Georgetown.

Wholesale Prices of Anthracite Coal f.o.b., at the Tide Water Shipping Ports per ton of 2240 lb.

The following prices comprise only those of the Lackawanna, Scranton and Pittston Companies, for the month of June. Rates of all the other companies are in abeyance, pending the settlement of the strike.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
Wyoming Coals.						
Lackawanna and Scranton at Elizabethport & Hoboken	4 90	5 00	5 10	5 25	5 70	4 70
Pittston at Newburgh	4 85	4 85	4 95	5 05	5 55	4 60
Wilkesbarre at Port Johnston	....	....	....	....	....	....
Plymouth, R. A	....	..	....	....	....	....
Susque. Coal Co. at Amboy W.A.	....	....	....	..	....	....
Kingston at Hoboken	....	....	..	..	....	....
Lehigh Coals.						
Old Company at Port Johnston	....	....	....	....	....	....
Old Company's Room Run "	....	....	..	....	....	....
Sugar Loaf at "	....	....	....	....	....	....
Lehigh Coal Exchange "	....	....	....	....	....	....
Honey Brook at Elizabethport	....	....	....	....	....	....
Spring Mt. C. Co. at Hoboken	....	....	....	....	....	....
Beaver Meadow at South Amboy	....	....	....	....	....	....
Schuylkill Coals.						
Schuylkill white ash	....	....	....	....	....	....
Schuylkill red ash	....	....	....	....	....	....
Shamokin white and red ash	....	....	....	....	....	....
N. Franklin	....	....	....	....	....	....
Lorberry	....	....	....	....	....	....
Lykens Valley	....	....	....	....	....	....

Pittston coal is delivered to carts in New York or Brooklyn at 65 cents per ton in addition to the above rates.

	Per ton.
Freight from Hoboken and Weehawken to New York	40c.
" " Elizabethport & Fort Johnston to New York	45c.
" " South Amboy to New York	50c.

Freight on Lackawanna coal from Rondout to New York, by boats or barges of the D. & H. Canal Co., 50c. per ton.

Wholesale Prices of Bituminous Coal.

Domestic Gas Coals.

Per ton of 2240 lb.	Shipping Ports.	At the Alongside in New York.
Westmoreland and Penn, at Greenwich, Philadelphia	$5 20	$6 50
" " at S. Amboy	6 00	6 50
Red Bank Cannel Pa., at Phil	8 00	8 50
" " at S. Amboy	8 50	....
" Orrel,	6 00	6 50
Youghiogheny, Waverly Co., at Baltimore	5 00	6 50
Despard, West Va., nominal "	4 75	6 50
Murphy Run, W. Va. at Baltimore	4 75	6 30
Fairmount, W. Va " "	4 75	6 50
Newburgh Orrel, Md. " "	4 75	6 50
Cannelton Cannel, W. Va., at Richmond	9 50	11 00
" Splint, " " "	5 00	6 50
Peytona Cannel, " " "	9 50	11 50
Straitsville, " At Sandusky, O "	3 25	10 00

Foreign Gas Coals.

	Sterling.	Am. cur'cy.
Newcastle, at Newcastle-on-Tyne	10/6@12/9	6 50@ 7 00
Liverpool House Orrel, at Liverpool	26/	13 00
ince Hall Cannel "	47/	18 00@20 00
" Gas Cannel "	30/	12 00
Scotch Gas Cannel, at Glasgow, nominal	25/	7 50
	Gold.	
Block House, at Cow Bay, N.S	2 00	5 50
Caledonia, at Port Caledonia	1 75	5 25
Glace Bay, at Glace Bay	1 80	5 50
Lingan, at Lingan Bay	75	....
Sydney, International and Reserve mines, at Sydney	2 00	5 50
Pictou, Albion and Vale mines, at Pictou	2 25	5 75

Steam and House Coals.

Broad Top, at the mine, $1,25; at Amboy	4 75@5 00	5 25@5 50
Cumberland, at Georgetown and Alexandria, Va.	4 00@4 25	....@....
Cumberland at Baltimore	4 15@4 50	5 75@6 25
Clearfield, " Derby," " Kittanning," "Sterling," and " Eureka," at the mines, $1.25; at Greenwich, Phil	4 60	5 65
James River, carbonite, at Richmond, Va	....	....
" bituminous, "	....	....

Retail Prices in New York.

Anthracite.

Per 2000 lb.	Grate and Egg.	Stove.	Chestnut.
Pittston coal, in yard	$6 20	$6 40	$5 60
*Lackawanna Coal, del'd	6 75	7 00	6 25
Wilkes-Barre, delivered	6 50	6 75	6 00
Lehigh & Locust Mountain, del'd	....	....	....
Schuylkill Red Ash del'd	....	....	....

The cost of delivering Pittston coal ranges from 40 cents to $1 per ton, according to distance from the yard.

* Lackawanna grate is quoted 25c. per ton less than egg.

Bituminous.

Liverpool House Orrel, delivered, per ton of 2000 lb				$23 00
Liverpool House Cannel	"	"	"	25 00
American Sterling	"	"	"	13 50
American Orrel	"	"	"	15 00@16 00
Red Bank Cannel	"	"	"	14 00
Carbonite	"	"	"	12 00
Cumberland	"	"	"	9 00
Acadia, Pictou, N. S.	"	"	"	14 00

Baltimore, Md. June 8, 1875.

Reported by our Special Correspondent

ANTHRACITE.

WHOLESALE OR TRADE PRICES PER 2240 lb.

Wilkes-Barre, "Lee," or "Diamond," Pittston and Plymouth. White ash.	In cars at depot.	By boats afloat.
Lump and steamboat	$5 35	$5 20
Broken	5 35	5 20
Egg	5 65	5 50
Stove	5 80	5 65

Shamokin, (red or white ash), and "Boston," freeburning white ash,		
Egg	5 05	5 50
Stove	5 80	5 65
Lykens Valley, red ash,		
All sizes	6 05	5 72

From wharf or yard, wholesale, 50@75c. additional. By retail, all kinds and sizes, per 2,240 lb, $6 75@7 75.

BITUMINOUS.

George's Creek and Cumberland f. o. b. at Locust Point	4 35	4 50
West Vairginia f. o. b. at Locust Point		5 50
Youghiogheny Gas, f. o. b. at Locust Point		5 50
Swanton Coal, George's Creek		4 40

Boston. June, 8, 1875.

Reported by our special correspondent.

CARGO PRICES TO TRADE.

Lingan coal	$ 5 75	Westmoreland, and Penn.	7 25
Caledonia	5 00	Waverly Co. Youghiogh'y	7 25
Pictou	6 15	Cannelton Cannel	11 75
Block House	5 60	Cumberland	6 25@ 6 50
Red Bank Cannel	10 00	Anthracite,	6 50@ 7 25
Glace Bay	5 00	" Retail	7 50@ 8 00
Sydney	7 00		

The *Commercial Bulletin* says:—"The market has ruled dull and weak, in view of the now undeniable fact that the strike is nearly if not quite over. Prices, though not much higher than a year ago at this time, are believed by manufacturers to be considerably above their natural level, and this class of consumers is about out of the market, only buying in a hand-to-mouth way as needed, and so many establishments are closed, are running on short time, or need no fuel, that this outlet is very limited. The little coal that is needed for household purposes finds a dull sale at $8@8 50, and occasionally at $9.

"Soft coals are dull and but little inquired for. There has been but one arrival of Nova Scotia sorts. Cumberland is quiet.

"Total receipts for the week—6751 tons domestic and 214 foreign, against 24,225 tons domestic and 1025 tons foreign for the corresponding week last year. Total receipts since Jan. 1, 194,429 tons domestic and 1878 tons foreign, against 307,535 tons domestic and 5679 tons foreign for the same time last year, and 299,751 tons domestic and 9604 tons foreign for the same time in 1873."

Buffalo, N. Y. June 8, 1875.

Reported by our Special Correspondent.

ANTHRACITE.

	Afloat	F.O.B Vessel	Retail, Deliv'd
Grate	$5 50	$6 00	$7 00
Egg	5 50	6 00	7 00
Stove	5 95	6 45	7 45
Nut	5 70	6 20	7 20

	Lump	R of M	Nut.	Slack.
Catfish	$3 75	$3 50	$3 25	$2 75
Stoneboro			3 25	2 75
Youghiogheny	4 75			
Sterling Cannel	5 50			
Connelsville Coke	5 75			

Chicago, Ill. June 8, 1875.

Specially reported by Messrs. RENO & LITTLE, Coal Merchants.

No change in prices of coal.

Retail prices per ton of 2000 lb. delivered to buyer.

BITUMINOUS.

Lehigh Lump	$10 75	Briar Hill and Erie	7 50@
Lehigh prepared and car load lots	10 25	Walnut Hill (W. Va.)	6 50@
Lackawanna, Wilkes-Barre and Pittston,*		Midway (West Va.)	6 50@
		Cannel	8 00@ 9 00
Grate, egg, and chestnut.	10 00	Blossburg	8 00
Stove or range	10 00	Indiana Block	6 00
		Hocking "Brooks"	6 00
		Wilmington and Illinois	5 00

*75 cents off these prices for car load lots to country dealers and manufacturers.

Cincinnati, O. June 8, 1875.

Reported by our Special Correspondent.

The river price for coal is to-day:

Per ton of 2000 lb.

	Bush.	Ton.
Youghiogheny, or Pittsburgh, afloat	9½c.	—
Pomeroy coal	6½c.	—
Cannel coal	16c.	—
Semi Cannel	9½c.	—

The following are retail prices delivered:

Youghiogheny	c.	$3 35
Pomeroy	c.	2 75
Cannel	c.	5 50
Kanawha Semi Cannel	c.	3 35
Anthracite		9 50@10
Foundry coke	—	—
Coke, hard and soft	10 c.	—

Cleveland, O. June 8, 1875.

Reported by our Special Correspondent.

Per ton of 2000 lb. f. o. b. vessels.

Youghiogheny, l'p	$4 40	Columbiana	$3 00
Youghiogheny, nut	3 50	Strip Vein & Steubenville	3 30
Briar Hill, according to quality	$3 65 to 4 00	Mountain Blossburg (blacksmith)	5 40
Massillon	3 25	American Cannel Coal Co.s Cannel	4 40
Hocking Valley	3 35		
Straitsville	3 35		

The coal market remains firm and unchanged. The supply is ample for all demands and lake shipments are quite lively, particularly to Canadian ports. The resumption of mining in Hocking Valley has not resulted in as large shipments as was anticipated, the Straitsville coal which was principally supplied during the strike still holding the market better than was expected, by reason of its excellent quality for steam and the general satisfaction it gives for all purposes. The Massillon and Tuscarawas coals also find the Straitsville a strong competitor. Work is gradually being resumed in the Mahoning region, but principally by new men, the operators being still determined to resist an advance.—*Manufacturing and Trade Review.*

Detroit, Mich. June 8, 1875.

Specially reported by Messrs. ROBINSON & KEYS, dealers in all kinds of coal.

Per ton of 2000 lb.

Lehigh Lump, per ton	$10 50	Blossburg	8 50
Lehigh " prep.sizes.	10 00	Briar Hill	7 50
Wilkes-Barre, Grate and Egg	9 00	Willow Bank	7 00
Wilkes-Barre, Stove and Nut	9 50	Erie	7 50
		Massillon	7 00

Erie, Pa. June 8, 1875.

Reported by our Special Correspondent.

Wholesale, per ton of 2,000 lb.

Bituminous f.o.b.

Briar Hill lump	$4 00	Beaver lump	$4 00

Connelsville. June 9, 1875.

The shipments during the past week show a slight increase over last, the former being 1,234, and the latter, 1,313 tons. This last figure may be considered a fair average trade, and while it exists, very little coke will accumulate. Prices obtained are somewhat firmer, very few sales being made for less than 2¾, and some being reported as high as 3¼; the latter being from works that have gained a reputation for producing a superior article. The trade may now be considered in a healthy state, owing to the strike having failed, and the men going to work at old rates.

Indianapolis, Ind. June 8, 1875.

Specially reported by Messrs. COBB & BRANHAM.

Wholesale on board cars, and retail delivered to consumers.

Per ton of 2000 lb., Bushel of 70 lb.

We quote to-day, wholesale:

BITUMINOUS.

Sand Creek, per ton	$3 25	Peytona cannel, per ton	7 25
White River, "	3 00	Indiana cannel	6 50
Brazil Block, "	2 65	Hocking Valley	4 25
Highland, grate, "	2 60	Youghiogheny	4 75
Block Nut, per car	18 00	Blossburg (smithing)	6 50
Highland " "	18 00	Piedmont "	6 50
Block slack, "	17 00	Gas coke, per bushel.	10

ANTHRACITE (Lackawanna and Wilkes-Barre).

Grate	$8 50	Chestnut	8 40
Egg	8 50	Stove	8 65

Owing to the Miner's strike there is no Lehigh coal in this market.

Retail, per bushel, delivered.

Sand Creek	15c.	Block Nut, steam,	8
White River	14	" Slack, "	7
Brazil Block	14	Peytona Cannel	28
Highland grate	14	Indiana "	24
Block Nut, domestic use	12	Youghiogheny	20
Highland Nut, dom. use	12	Blossburg	26
" " steam	8	Piedmont	26

GAS COKE (Measured).

Crushed	15c.	Lump	12c.

ANTHRACITE.

All sizes, (Wilkes-Barre and Lackawanna), $10 per ton.

Louisville, Ky. June 8, 1875.

Specially reported by Messrs. BYRNE & SPEED.

The following are our retail prices:

Pittsburgh, per load of 1900 lb	$3 00
Screened Raymond City	2 75
Pine Hill	2 75
Buckeye Cannel	5 00
Peytona Cannel	5 50
Nut and Slack	2 25
Pine Hill nut	2 25
Kentucky lump, per load	
" nut, "	
" Slack "	
City-made Coke, per bushel	
Pittsburgh, wholesale, per bush.	
Kentucky on cars at wholesale, per bush.	
Anthracite, per ton	$10 to $10 50

Milwaukee, Wis. June 7, 1875.

Specially reported by Messrs. R. P. ELMORE & Co.

We are now receiving some new coal, though but slowly, on account of the small supply at Buffalo. Our prices for the Spring open as follows:

Retail prices per ton of 2000 lb.

Lehigh Lump	$10 00	Scranton	$9 50
Lehigh Prepared	10 50	Briar Hill, select	8 00
Lackawanna	9 50	Blossburg	8 00
Pittston	9 50	Pittsburgh	7 00

New Orleans, La. June 5, 1875.

As the prospects of a June rise begin to vanish our coal market stiffens and holders are reluctant to part with their coal except at advanced figures.

The stock afloat on the 1st inst. was 176 boats and 4 barges against 264 boats and 25 barges at the same time last year.

Arrivals during May were	30 boats	1 barge
Consumption " " "	29 "	2 "

We quote:

Pittsburgh coal, retail, per bbl	65c.
" wholesale	40c.
" to steamboats, per box	50c.
" to manufacturers, per bbl	60c.
" shipments per hhd	$6 00
Anthracite, retail, per ton	$12 50
" wholesale per ton	
Spadra (Arkansas) coal, retail, per bbl	
Mt. Carbon, wholesale, per bbl	
" " retail per bbl	
Virginia Cannel, per bbl	90c.
Scotch Cannel, per bbl	

Pittsburgh, Pa. June 8, 1875.

There is no apparent improvement inside the coal or coke trade at this point. All mines having any trade are running at the old prices for digging.

Per ton of 2000 lb. and Bushel of 76 lb.

	per ton.		per ton
Youghiogheny coal	$2 00	Pittsburgh retail delivered	
" coke	2 50	per bushel	9c@10c
Connellsville coal	2 50	Anth'cite on cars Lehigh.	$7 75
" coke	$2 25@2 75	" " Wilkes-	
Pittsburgh coal	1 85	Barre	6 75

Twenty-five to fifty cents per ton additional for delivery.

San Francisco.

From the *Commercial Herald* of May 27, 1875.

Imports from January 1st to May 16th:

Anthracite, tons	5,051	English, tons	21,409
Australian, tons	33,080	Vancouver Island, tons	23,441
Coos Bay, tons	12,762	Rocky Mountain, tons	22
Cumberland, tons	5,039	Seattle, tons	14,494
Mt. Diablo, tons (3 mos)	54,612	Bellingham Bay, tons	4,240

The market is bare of Anthracite, which is now much called for. Pittston may be nominally quoted at $20; Lehigh, $25@$28 in lots; Cumberland on the contrary is quite plentiful, quotable at $18@20, in bulk and casks. Australian continues in liberal stock, the dealers carrying large supplies. Cargo parcels of Sydney and Wallsend may be quoted at $9@9 25. The *Gem of the Ocean* brought down 970 tons Seattle. This description is purchased freely by the Central Pacific Railroad, and may be quoted at $9 50. The *Washington Libby* from Departure Bay brought 1,550 tons Wellington, which may be quoted at $10 ex-ship. This is a favorite article for all household purposes. We quote Bellingham Bay at $8 50; Coos Bay, $10; California Mt. Diablo Steam, $6 25@8 25 for fine and coarse respectively. Cargoes of Scotch and English Steam to arrive may be quoted at $9 50. West Hartley at the moment is scarce. The natural result of the continued scarcity of anthracite will be the more use of coke as a substitute. The *Osmyn* from Seattle brings 790 tons

Toledo, Ohio. June 8, 1875.

Specially reported by Messrs. GOSLINE & BARBOUR.

The following are the quotations on Anthracite and Bituminous coals at Toledo:

Per ton of 2000 lb. on cars.

Hocking Valley	$3 40	Massillon	4 20
Straitsville	3 40	Youghiogheny	5 00
Shawnee	3 40	Blossburg	7 50
" nut	2 90	Cumberland	7 50
Briar Hill	5 50	Connellsville coke	7 00

Anthracite.

Grate, screened	$7 75	Stove, screened,	$8 25
Egg "	7 75	Chestnut "	7 75
Lehigh Lump	9 50		

40 cents to $1 per ton additional for delivery at retail.

Halifax, N. S. June 7, 1875.

Prices per ton of 2240 lb. in gold.

Sydney (old mines)	$4 00	Little Glace Bay	3 50
Gowrie	2 50	Blockhouse	3 75
Victoria	3 50	Albion (at Railroad)	4 00

Montreal. June 8, 1875.

Specially reported by Messrs. ROBERT C. ADAMS & Co.

Anthracite is arriving freely by Canal at the low rate of $2 per ton freight from New York, and prices have been reduced about $3 per ton below the winter rates, being now probably at their lowest limit.

In bituminous coal not much is doing; prices rule low without prospect of immediate advance.

One feature of interest is the purchase by the Gas Co. of 1,200 tons American Cannel, to be used in place of the famous Scotch Bog Head Cannel, which is no longer obtainable.

We quote:

Wholesale per ton of 2,240 lb.

Scotch Steam	$5 50	Cape Breton Steam	$4 50
Pictou "	5 00	Newcastle Smiths	7 00

Anthracite at retail, per 2,000 lb., delivered.

Egg	$7 50	Chestnut	7 00
Stove	7 75		

Toronto, Ont. June 8, 1875.

ANTHRACITE.

	per ton.		per ton.
Broken	$7 65	Chestnut	$7 65
Egg	7 65	Lehigh	9 00
Stove	8 15		

BITUMINOUS.

Blossburgh	7 50	Screenings	5 00
Briar Hill	7 00	Soft Nut	4 50

Rates of Transportation on Anthracite Coal to Tide Ports.

Lehigh and Wyoming Coals, per ton of 2240 lb.	From Penn Haven.	From Mauch Chunk.	From Hazleton.*	From Upper Lehigh	From Ashley and Sugar Notch.
To ‡ Newark, N. J. via Central Railroad of New Jersey	2 83	2 67	2 86	3 18	3 39
‡ Mauch Chunk, Pa. via Central Railroad of N. J.	16	..	56	51	72
‡ Phillipsburg, N. J.	1 09	93	1 34	1 44	1 65
‡ Elizabethport, Port Johnston, Hoboken and South Amboy, N. J. shipping and wharfage 35c. add.	2 47	2 31	2 80	2 82	3 03
High Bridge, N. J.	2 40	2 20	3 80	2 79	3 09
Somerville and Barican, N. J.	2 80	2 60	3 20	3 19	3 49
Elizabeth, Cranford, Westfield and Elizabethport, for consumption.	2 95	2 75	3 35	3 34	3 64
¶ Jersey City, N. J., and New York, via Morris Canal	2 85	2 35	3 17	3 24	3 54
Andover, via Delaware, Lack. and and Western RR	3 30	3 10	3 70	3 69	3 99
§ Trenton, Somerset Junction and Greensburg, via P. RR. Belvidere Division	2 65	2 45	3 05	3 04	3 34
Trenton, for shipment, including shipping and wharfage	2 11	1 95	2 45	2 46	2 76

* Rates on line coal from Hazleton are 10c. per ton above these figures.

‡ The cost of unloading is to be added to these rates. No charge less than 40c. per ton will be made for any distance. Tolls from Mauch Chunk to Phillipsburg for way points will be $1 15 per ton.

§ Twenty cents per ton less when five cars at a time to one

party. Provided that where the reduction makes the rate $1 a ton, or less, the rate will be $1.

¶ 20 cents per ton additional for transferring coal from boat to boat, and 30 cents per ton for reshipment of same from wharves.

Schuylkill Coals. per ton of 2240 lb.	From Pine Grove.	From Tamaqua.	From Port Carbon.	From Mount Carbon.	From Schuylkill Haven.
To *Port Richmond*, for shipment, via P. & R. R. R., Main Line	1 87	1 82	1 75	1 74	1 67
Philadelphia, Retail yards	1 97	1 92	1 85	1 84	1 77
Harrisburg, via Lebanon Valley Branch	1 23	1 80	1 73	1 72	1 65
Allentown, via East Pennsylvania Branch	1 52	1 47	1 40	1 39	1 32
Lancaster, and Points on Lancaster Branch, via R. & C. R.R.	1 57	1 52	1 45	1 44	1 37
Dauphin, via Schuylkill and Susquehanna Branch		62		1 25 via Aub	1 17 urn.
Jonestown, via Lebanon and Tremont Branch		86		1 69	1 68	1 61
Lebanon, via Lebanon and Tremont Branch		90		1 88	1 87	1 8
From *Tamanend* to *Catawissa*, via Catawissa and Williamsport Branch Railroad						94
From *Tamanend* to *Williamsport*, via Catawissa and Williamsport Branch Railroad						1 39
*From *Port Clinton* to *Philadelphia* via Schuylkill Canal, including freight and charges for the use of cars and barges, and for tolls (exclusive of cost of unloading)						1 59
*From *Port Clinton* to *New York*, within towing limits, " 53d street						2 56

For shipment via Main Road or Schulykill Canal, one and one-half cents per ton per mile, and two cents per ton additional, to Port Carbon, Mount Carbon, Schuylkill Haven, Pine Grove, Tamaqua, or Port Clinton, for Canal, as the case may be.

Coal sent to points on the Catawissa and Williamsport Branch will be charged one and one-half cents per ton per mile, and two cents per ton additional to Tamanend.

*The charge from Schuylkill Haven to Philadelphia is 11c. additional to these rates.

On and after June 1, until further notice, a drawback of ten cents per ton will be paid on shipments of Anthracite Coal from Schuylkill Haven and Port Clinton that have passed Fairmount Locks to Philadelphia and vicinity.

The rates of freight and tolls on lump, steamboat and broken coal will be ten per cent. less than the above rates.

Erie Canal.

	per 2240 lb.
Hoboken to Buffalo	75c.
" Rochester	70c.
" Oswego	65c.

The above rates are exclusive of harbor towing, trimming, unloading and tolls.

Freights.

Per ton of 2240 lb.

PORTS.	From Baltimore and Georgetown.	From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken.
Augusta, Me	....	1 80
Albany	....	....
Amesbury, Mass	....	....
Bangor, Me	2 00	1 20
Bath, Me	1 75	....
Baltimore	...	1 30
Boston, Mass	1 65	1 00
Bridgeport, Ct	1 50	85
Bristol, Ct	....	....
Derby	....	....
Dighton	....	....
East Cambridge	....	....
Fall River	....	1 00
Hackensack	....	....
Hartford	....	1 25
Hoboken	....	....
Hudson	....	....
Jersey City	....	....
Middletown	....	....
Mystic	....	....
Newark	....	....
New Bedford	1 50	1 03
Newburyport	1 70	1 25
New Haven	....	85
New London	1 50	....
Newport	1 50	1 00
*New York	1 35	....
Norfolk, Va	....	....
Norwalk	....	....
Norwich	....	....
Pawtucket	...	....
Philadelphia	85	....
Portland	1 65	....
Portsmouth, N. H	1 70	....
Providence	1 50	1 00
Petersburg, Va	....	....
Richmond, Va	....	....
Rockport	....	....
Saco	....	..
Sag Harbor	....	1 00
Salem	1 65	1 00
Savannah, Ga	....	....
Stamford	....	....
Stonington	....	..
Taunton	....	1 20
Trenton, N. J	...	....
Troy	....	....
Warren, R. I	....	1 00
Washington	....	....
Wareham	....	....
Wilmington, Del	....	....

* The rate by barge from this point is $1 55.

THE BRITISH COAL AND IRON TRADES.

May 29, 1875.

North of England.—The coal trade is in a fairly satisfactory state, and prices are pretty firm all around. Some of the best gas coal collieries have taken contracts lately in Holland and London at reduced prices. Coke is in good demand at 16/. Tyne coals in trucks are quoted as follows: Best steam, 15/ 6d.@16/; seconds, 14/@14/ 6d; household, 14/@16/; gas, 9/ 6d.@11/ 6d.; and manufacturing 16/. With the exception of the prices realized, the iron trade of this district is in a very satisfactory condition. Nearly all the furnaces and rolling mills are supplied with orders that will keep them running during the Summer. The make of pig iron is above the average, but stocks are not accumulating. Shipments to foreign parts are very large, and there is a greater inclination on the part of consumers to make purchases. No. 1 foundry is quoted at 62/; No 2, 58/; and forge, 54/. The increased prices of rails are well maintained in spite of the resumption of the South Wales district. Puddled bars, in consequence of their scarcity, have been advanced to £5 7/ 6d. Rails are quoted at £7@£7 7/ 6d.; common bars, £8@£8 2/ 6d. The market has been unsettled by some recent failures in the iron trade, but confidence appears to be regaining.

Barrow-in-Furness.—There has been a heavy falling off in the demand for all articles. Men are being discharged, furnaces damped down, and the output restricted. Iron ore is easier. No 1 Bessemer pig is quoted at £4 5/; No. No. 2, £4 2/6; No. 3, £4; and No. 3, hematite, £4 2/ 6.

Yorkshire and Derbyshire.—With the exception of very fair shipments of steam coal, the trade may be considered very unsatisfactory, with no encouragement in the early future. The iron-works are fairly supplied with orders. At Sheffield the heavy armor-plate mills are kept fairly going, and there is more doing in Bessemer rails and forgings

Manchester.—The coal trade of this district is very quiet, and although the collieries have not been fairly at work since the Whitsuntide holidays, and stocks have been decreased, prices are no firmer, and considerable efforts are made to secure orders, and in some cases prices are quite irregular. In the Wigan district prices are as follows: Best Arley mine, 14/@15/ per ton; Pemberton 4 ft., 12/; common coal, 9/@10/; burgie, 7/@7/6; and slack, 4/6@5/. There are large inquiries for gas coal, which is being sold at 12/@13/ per ton at the pit for screened. The purchases of pig iron are very light. Buyers do not think the market has reached its lowest point, and are only purchasing for the most pressing necessities. No. 3 foundry, Lancashire make, is selling at 68/6, and forge at 65/. The finished iron trade is quiet, the mills and forges are only resuming after the holidays.

South Staffordshire.—There is an improvement in the demand for both pig and manufactured iron. Cinder pig is quoted at £3 2/ 6d.; mixed cinder and mine, £4; best native all-mine, £5 5/. The leading firms experience rather more enquiry for marked bars which are quoted on the basis of £10 10/, £11 and £11 12/ 6d. for the three ruling qualities. Common unmarked bars are offering as low as £8 10/@£8 15/. It is rumored that a Belgium make of railway spikes is offering at from £5@£8 per ton under the English standard quotations. The coal trade is quiet, and prices are weak and irregular

Monmouthshire and South Wales.—A large number of colliers are still idle, but the men are resuming in small bands, and the wheels of commerce are again being set in motion. There is an abundance of coal being raised for the immediate requirements, and furnaces are relighting. There have been increased foreign shipments, but if the demand does not increase stocks will accumulate. There is an improved demand for manufactured iron, brought about by the reduced prices that makers are now enabled to accept. It is thought that work will be fully resumed in a short time, but it will be a long time before business will take its regular course.

Scotland.—"Towards the close of last week, prices in the warrant market took an upward turn, but at the end of a couple of days, the downward tendency again set in, and the figures are now lower than ever. There was only a small business on Tuesday, at a decline to 62/ 3d. and 62/ cash and 61/ 9d. one month fixed. It is believed that the prices have now about reached their lowest point, and confident anticipations are being formed that the trade will soon assume a more favorable aspect. The principal makers' brands have again declined in value since last week, the quotations being as follows:—G.m.b. at Glasgow, No. 1, 64/, No. 3, 62/; Gartsherrie, 68/ 6d and 65/; Coltness, 70/ 6d. and 65/; Summerlee, 68/ and 64/; Langloan, 68/ and 64/; Carnbroe, 66/ and 64/; Monkland, 64/ and 63/ Clyde, 65/ and 63/; Govan, at Broomielaw, 65/ and 63/; Calder, at Port Dundas, 68/ and 64/; Glengarnock, at Ardrossan, 71/ and 64/; Eglinton, 63/ and 61/ 6d; Dalmellington, 63/ and 62/; Carron, at Grangemouth, selected, 70/; Shotts, at Leith, 68/ 6d. and 66/; Kinneil, at Boness, 66/ and 63/. The shipments of pig iron from Scotch ports for the week ending the 22d inst. amounted to 10,180 tons, showing the large increase of 3,475 tons, as compared with those of the corresponding week of 1874. The imports of Middlesbrough pigs at Grangemouth for the week were 1680 tons, being 533 less than in the corresponding week of last year. Two very promising features appear in these returns. The reduced prices of iron are inducing a much larger foreign demand, and also diminishing the importations from the North of England, which were comparatively heavy when Scotch iron was dear. Another indication of the improving state of the iron trade is found in the fact that many of the malleable works are obtaining a considerable accession of orders. Some of them, which have been at a complete standstill for a year, or a year and a-half, are now working, and in several instances at full time. This is more particularly the case with plate mills. It cannot be said that the coal trade of Glasgow and the West of Scotland is at present of limited proportions; yet the supply is altogether out of proportion too large for the demand, and prices have again to a small extent given way."

Import Duties.

The following are the duties in Gold:

Flat Iron, not less than 1, nor more than 6 inches wide, nor less than ¾, nor more than 2 inches thick. *Round Iron*, not less than ¾, nor more than 2 inches in diameter, and *Square Iron*, not less than ½, nor more than 2 inches square per pound 1 c.

Flat, Round or Square Iron, of larger or smaller sizes than the above mentioned, per lb. 1½c

Provided, that all iron in slabs, blooms, loops, or other forms, less finished than bars, and more advanced than pig iron, except castings, shall pay the same as iron in bars.

Provided, that none of the above iron shall pay less than 35 per cent.

Railroad Bars—Iron 70c. per 100 lb.
Railroad Bars—Steel $1.25 per 100 lb.
Boiler plates, or other plate iron not less than 3-16 of an inch thick, per lb 1½c.
Scrap castings per ton $6 00
" *wrought* " " 8 00
Pig iron per ton 7 00
Iron ore 20 per cent. *ad valorem.*

Antimony, crude or regulus, 10 per cent.
Copper Ore—On all fine copper contained therein, 3c. per lb.
Old Copper, fit for manufacture only, 4c. per lb.
Copper, pigs, bars, ingots or plates, 5c per lb.
" sheets, bolts, nails, spikes, rods, pipes, &c., 45 per cent.
Tin, in bars, blocks or pigs, and grain tin, free.
Tin Plates, or sheet, and terne or taggers tin, 1 1-10c. per lb.
Lead—Bars or pigs, 2c. per lb. Old lead, for manufacture only, 1½c. per lb. Pipes, shot and sheets, 2¾c. per lb.
Zinc, in blocks or pigs, 1½c. per lb.; in sheets, 2¼c. per lb.; manufactures of, 35 per cent.
Quicksilver, free.

IRON MARKET REVIEW.

New York.

FRIDAY EVENING, June 11, 1875.

American Pig.—The situation is without change. The amount of business doing is mostly in a retail way, and not worthy of note. Consumers believe that prices must go lower, and the actual requirements of the market are so small that many makers consider it policy to maintain our higher quotations, knowing that the increase of business to be brought about by a slight reduction is hardly worth the effort, and would necessitate a further reduction in moving additional lots. It is thought, however, that with a much longer continuation of the inactivity that prevails now; some irons must be forced upon the market to meet the financial wants of the makers. The report of the Iron and Steel Association for 1874 is published, and many of our iron-men were thunder-struck when they observed the figures. It is shown that the production last year was but 178,865 tons behind 1873, and the stock in the hands of makers and their agents, Dec. 31, was 795,784 net tons. The same authority adds the stocks outside of these, and estimates a total stock of 1,000,000 tons, which, if anything, is under the actual quantity. The stocks in the Lehigh are given as 28,791 tons, while nearly double that quantity is supposed to have been in the companies' stock yards, a great deal of which, however, was said to belong to speculators and others. There is nothing to indicate that stocks have been reduced since the first of the year, but rather that they have been slightly increased. These figures are far from encouraging to the iron trade, but as they are facts, it would be well for makers to study the situation well, and see if there is not some way to better it. We quote at $26@$28 for No. 1 foundry; $24@$26 for No. 2; and $22@$25 for forge.

Scotch Pig.—This market continues in the same demoralized condition that we have been reporting for weeks. We are reported sales of two lots of Eglinton, 100 tons each, said to be at $27@$27 50, and 100 tons of Coltness on private terms. The arrivals still continue greater than the consumption; but stocks would not be large were there any activity. The following are the nominal quotations: Eglinton, $29@$30; Coltness, $31; Glengarnock, $31@$33; Gartsherrie, $31@$33. The Glasgow market is without material change, but with a downward inclination.

Rails.—There have been no further sales. There is some inquiry which it is thought will result in business. We quote American iron rails at $48@$50 at mills, and steel at $70@$75.

Old Rails.—We note sales aggregating 660 tons on private terms. There is a little further inquiry. We quote at $26 50@$27.

Scrap.—We note sales aggregating 800 tons on private terms. The market is again quiet at $31@$33.

Boston. June 5, 1875

The *Commercial Bulletin* says:

"*Pig* has settled back into an unsatisfactory condition. The reports from the primary markets are of a character to indicate that over-production threatens values, while the news of failures abroad is gossiped as likely to compel a cleaning up of several very large lots of imported pig for account of whom it may concern. This market shows rather more nerve than either New York or Philadelphia, but still, should a prompt-paying buyer come seeking a 25 or 50-ton lot, he would get his iron at 'pretty low figures.' The trouble is, no one wants more than five tons at a time, and then seek the lowest values. On such lots even slow coaches supply their needs of the fancy brands at our quotations. There are holders who, like Coffin, propose to sell as low as anybody, and so satisfactorily succeed in doing it that the pressure to prices is rather downward than upward. We quote on wharves No 1, $29@31; No 2, $22@27, and gray forge $21@24. Foreign pig is nominally out of the market, quoting $36 for Eglinton.

"*Bar* has had a fair jobbing business, ranging from $59 to $63, the average sales being at $60. The market is not particularly strong, although many dealers prefer lying idle to selling at the ruling quotations, the price not making good cost and expenses. There is not a heavy stock in the market, nor much on the way, and yet it is quite sufficient to meet all wants through the season. We learn that the Pittsburgh seller disposed of 200 tons to a consumer at about our figures last noticed.

"*Steel* is moving along in a small, steady way, selling in a general assortment way. We quote American tool 15@15½c; American machinery 9½@10c; do. cash tires 8½@12½c; Sweet's Excelsior Tire, 7@7½c; English Tool 16@17c.

"*Copper* is again lower and offering on deliveries through June at 22¾@23c without drawing any business from buyers. We quote 22¾@23c for spot; New sheathing 30c; Bolts and Braziers 31c; Yellow metal Bolts 28@29c.

"*Lead* is dull and firm. We quote domestic 6c; Foreign 6½c; Antimony is without request, and quotes at 12c gold per pound; Sheet and Pipe 9½c c'y; Tin-Lined Pipe 16½c; Bar Lead 9½c, less usual trade or 10 per cent discount.

"*Spelter* is strong and quiet. The combination still quote $7 25 currency 30 days, or $7 15 currency prompt cash. Silesian is quiet, quoting nominally $7 30 gold.

"*Tin* is dull and easy. Our quotation being still nominal. Plates are quiet. We quote Straits 20; Banca 24¼; Refined English 19½c gold. Plates are active; We quote Charcoal I. C., $9 50@10; Coke $7 75@8; and Terne at $8 50@11 gold."

Cincinnati. June 8, 1875.

Specially reported by Messrs. TRABER & AUBERT, commission merchants for the sale of pig iron, blooms, ore, etc.

The demand for Pig Metal is light, and prices are not as firm as they were. We quote:

CHARCOAL.	
Hanging Rock, No. 1, Foundry	$28 00@29 00—4 mos
" No. 2, "	26 00@27 00—4 mos
" Mill	25 00@26 00—4 mos
Tennessee No 1, Foundry	27 00@28 00—4 mos
Tennessee. No. 2 "	26 00@27 00—4 mos
" Mill	25 00@26 00—4 mos
Missouri, No. 1, Foundry	@ —4 mos
STONE COAL.	
Ohio No. 1, Foundry	26 00@27 00—4 mos
" No. 2, "	25 00@26 00—4 mos
Ohio Mill	24 00@25 00—4 mos
Missouri, No. 1, Foundry	28 00@29 00—4 mos
" No. 2, "	27 00@28 00—4 mos
" Mill	26 00@27 00—4 mos
CAR-WHEEL.	
Hanging Rock, C. B.	40 00@50 00—4 mos
Tennessee "	35 00@38 00—4 mos
Missouri "	35 00@40 00—4 mos
Alabama "	33 00@40 00—4 mos
BLOOMS.	
Charcoal	70 00@ 85 00—cash
SCRAP IRON.	
Cast	75c.@ 85c. cash
Wrought	1 00@ 1 40—cash

Chicago. June 8, 1875.

Specially reported by Messrs. ROGERS & Co., dealers in Scotch and American pig iron. Quotations are as follows:

No. 1 Coltness	$46 00@
No. 1 Gartsherrie	45 00@
No. 1 Summerlee	44 00@
No. 1 Glengarnock	42 00@
No. 1 Eglinton	40 00@
Warner's "American Scotch"	38 00@
Massilon No 1 Foundry	35 00@
No. 1 Grand Tower Mo. ores (Bituminous)	31 00@
No. 2, " "	29 00@
No. 1 Mill	27 00@
Union "A" 1 (Anthracite)	28 00@
Union "B" 1 (Anthracite)	27 00@
No. 1 Lake Superior (charcoal)	32 00@
No. 2 Lake Superior "	30 00@
No. 3 Lake Superior "	33 00@
No. 4 Lake Superior "	35 00@
Bessemer Steel Rails	76 00@
New Iron Rails	52 00@
Old Rails	28 00@

Cleveland, Ohio, June 8, 1875.

Specially reported by Messrs. C. E. BINGHAM & Co., dealers in pig iron and iron ore;

No. 1, Lake Superior Charcoal	33 00@
No. 2, " "	32 00@
No. 3, " "	32 50@
No. 4, " "	33 50@
Nos. 5 and 6 "	34 00@
No. 1, Bituminous foundry	29 50@
No. 2, " "	27 00@
No. 1, " Gray Forge	26 00@
American Scotch, No. 1, Cherry Valley	32 00@
" " No. 2	27 50@
No. 1, Massillon	31 00@
B—1, "	29 00@
No. 2, "	27 00@

The iron market remains steady and firm—no material change in prices or transactions. The demand for pig iron is yet slow and for small lots, whilst the supply is likely to be largely increased by additions from abroad. We do not hear of any intention on the part of furnace owners here or in the neighborhood to go into blast until there is a change of prices in their favor.—*Manufacturing and Trade Review.*

Indianapolis, Ind. June 8, 1875.

Specially reported by NELSON KINGMAN, broker and dealer in pig iron, etc.

Trade very dull at prices named below.

New Rails at mill	$56 00@58 00
Old Rails "	28 00@30 00
Hanging Rock Charcoal Pig No. 1 foundry	29 00@32 00—4 mos
" " " " " 2 "	27 00@30 00—4 mos
" " " Mill	25 00@28 00—4 mos
Car Wheel C. B.	45 00@50 00—4 mos
STONE COAL.	
Indiana No. 1 Foundry pig Red Short	30 00@33 00—4 mos
" 2 " " "	28 00@30 00—4 mos
" 1 Forge " "	@ —4 mos
" 2 " " "	@ —4 mos
Ohio No. 1 Foundry pig Cold Short	28 00@30 00—4 mos
" 2 "	26 00@23 00—4 mos
" Mill	25 00@28 00—4 mos
" No. 1 Foundry, Neutral	30 00@34 00—4 mos
" No. 2 " "	28 00@30 00—4 mos
Merchant Bar	2·35c.—3 mos
1st quality C. H. No. 1 Boiler Plates, per lb	5¼c.—3 mos
1st " Com. Sheet, for No. 24, W.G. "	4 c.—3 mos
1st " Charcoal Sheet " " "	6 c.—3 mos
Best Bloom Galvanized Shee', discount 20 per cent	—cash.
2dquality " " " 30 "	—cash.

f. o. b. in Indianapolis.

Louisville. June 8, 1875.

Specially reported by Messrs. GEORGE H. HULL & Co.

The market is dull, with small sales, and a strong tendency to inside quotations

Round lots could not be sold except at some concession in price. The usual time, 4 months, is allowed on the quotations below.

HOT BLAST—CHARCOAL.	
No. 1 foundry, from Hanging Rock Ores	$28 00@29 00
No. 2 " "	26 00@27 00
No. 1, Mill, from " "	24 00@25 00
No. 1, foundry, from Alabama, Georgia and Tennessee ores	26 00@27 00
No. 2, foundry, from Ala., Geo'a and Tenn. ores	25 00@26 00
No. 1, Mill, from " " " "	24 00@25 00
HOT BLAST—STONE COAL AND COKE.	
No. 1, foundry, from Hanging Rock ores	26 00@27 00
No. 2, " " " "	25 00@26 00
No. 1, Mill, " " " "	24 00@25 00
No. 1, foundry, from Ala., Geo'a and Tenn. ores	26 00@27 00
No. 2, " " " "	25 00@26 00
No. 1, Mill, " " " "	24 00@25 00
No. 1 foundry, from Missouri ores	28 00@29 00
No. 2 foundry, from Missouri ores	27 00@28 00
No. 1 Mill, from Missouri ores	26 00@27 00
COLD BLAST—CHARCOAL.	
Car Wheel from Hanging Rock ores	40 00@50 00
" " Tennessee "	35 00@36 00
" " Alabama and Georgia ores	38 00@40 00
" " Kentucky ores	30 00@42 00

Milwaukee. June 7, 1875.

The price of Pig Iron remains unchanged, with sales much the same as the past month.

The following are the present prices, per ton of 2,240 lb.:—

Frankfort L. S. Charcoal, No. 1	$30 00
" " " No. 2 & 3	28 00
" " " No. 4 & 5	31 00
" " " No. 6	35 00
Mil. Anthracite L. S., No. 1	30 00
" " " No. 2	28 00
Wisconsin Iron, No. 1	26 00
Mahoning Valley Bit's No. 1	32 00
" " " No. 2	30 00

Pittsburgh. June 8, 1875.

Specially reported by A. H. CHILDS, Esq., Commission Merchant for the sale of pig iron, blooms, ore, etc.

The Pig Iron Market is without material change. Prices are well sustained and for some brands an advance is asked.

The mills, however, are buying as lightly as possible in view of the fact that time for taking stock is near at hand. Quotations are:

No. 1 foundry	$27 00@28 00—4 mos
" 2 "	25 00@26 00—4 mos
Gray Forge	24 00@ —4 mos
White and mottled	21 00@22 50—4 mos

The *American Manufacturer* of June 9 says:

"PIG IRON.—There has been more activity during the past week, the volume of business reported having been unusually large, and with an increased demand and less disposition to sell, the market is becoming stronger, and some few sales were made at an advance. As intimated in our last review, producers generally have had their ideas up for some weeks past, and while the mills up to the present time have been able to buy about all they wanted at $24, 4 mos., several sales were made during the past week, mostly small, it is true, at $25, and the indications just now are that this will be the ruling price within a very short time, notwithstanding consumers say that the condition of the market for the product does not justify them in paying any advance on the raw article, and that the former is higher relatively than the latter. The fact of the 'hot dollar' question having been settled, and in favor of the mills, has stiffened the market considerably, as producers regard this as good evidence that the mills will run all Summer, with the exception of a few weeks required to take stock and make repairs, and hence their (the producers') determination to put up prices. At $24, 4 mos., there would be no difficulty in placing considerable quantities, especially for future delivery, but thus far manufacturers have bought but little at the advance, and, as already stated, sellers either for present or future delivery are very scarce at the first named figure. Foundry irons continue dull and unchanged.

"MANUFACTURED IRON.—Trade continues to hold out well, for this season of the year, and while for the ordinary sizes orders are not coming in as freely as they did last month, nor was this to be expected, the mills are all busy; many of them are still behind with orders which accumulated during the lock-out, and the indications continue favorable for a fair Summer trade. A good deal was said and written, during the lock-out, that Pittsburgh would lose her trade, that a great deal of it would be delivered elsewhere and could not be recovered; yet it is a fact, as noted in our last review, the production is as large now as ever it was, the best evidence of which is that every mill, with two exceptions, is in operation, many of them working double turn. Furthermore, we learn that a Western manufacturer has been here recently for the purpose of contracting for several hundred tons for future delivery, from which it is evident that he expected to buy here and have it delivered at his place of business cheaper than he could manufacture it; this has been quite common within the past few years, and it demonstrates very forcibly that Pittsburgh, owing to peculiar advantages, is in a position to compete successfully with all points; and the fact of the production being as large as ever it was, may be taken as good evidence, in face of the depressed condition of general business, that she has not lost much of her trade. Prices are firmer, in sympathy with the raw article, but unchanged. We continue to quote upon a basis of $2 35@2 40 for merchant bars."

The Pittsburgh *Commercial* of June 5, says:

"The sales reported below show a decided improvement in the demand for pig metal with a slight advance in the price obtained for some good brands, and if the hot weather does not stop the puddling furnaces, we may expect a continuance of the demand as long as the mills continue in operation.

"One sale of 1,000 tons is to go out of the city, and we heard of several offers to buy at $24 00, which were declined by the sellers.

We are reported the following sales:

BITUMINOUS COAL SMELTED FROM L. S. ORE.	
1,000 tons gray forge (to go out of city)	$24 25—4 mos.
1,000 tons gray forge	24 00—4 mos.
500 tons gray forge	24 00—4 mos.
500 tons white and mot., c. s.	21 00—4 mos.
350 tons close gray	23 50—4 mos.
300 tons gray forge	24 00—4 mos.
160 tons gray forge	24 00—4 mos.
100 tons gray forge	24 00—4 mos.
100 tons gray forge (extra)	25 00—4 mos.
100 tons gray forge	24 00—4 mos.
100 tons white cold short	21 00—cash.
50 tons gray forge	25 00—4 mos.
50 tons gray forge	24 00—4 mos.
20 tons No. 2 foundry	24 50—4 mos.
CHARCOAL.	
400 tons No. 1 foundry, Hanging Rock	Private terms.
100 tons gray forge, Lake Superior	$34 00—4 mos.
100 tons No. 2 foundry, Hanging Rock	34 00—4 mos.
80 tons No. 2 and No. 3, Hanging Rock	Private terms.
25 tons No. 1, Hanging Rock	30@32—4 mos.
10 tons No. 1 foundry, Hanging Rock	30 00—4 mos.
ALLEGHENY COKE.	
400 tons, a mixed lot	$24 00—4 mos.
100 tons Red Bank	25 00—4 mos.
ANTHRACITE.	
50 tons No. 1 foundry	$28 00—4 mos.
30 tons No. 1 foundry	28 00—4 mos.
10 tons No. 1 foundry	28 00—4 mos.
BLOOMS.	
10 tons Eastern charcoal	$75 00—4 mos.

San Francisco.

From the *Commercial Herald* of May 27, 1875.

The ship *Castle Roy*, 112 days from Glasgow, is at hand with 900 tons Pig Iron. All but 350 tons of this was sold prior to arrival. The present spot price for Scotch and English is $40@42 50; American, $40@41. As stated last week, the *St. Lucie*, for New York, carried 555 tons Selby Lead, say 10,226 pigs. The *Neptune*, from New York, brought 3,535 bars Iron; 2,500 pcs. pipe iron, etc. We continue to receive Yellow Sheathing in suits by rail across the Continent as ordered. The market for manufactured iron, etc., seems to be largely demoralized. Tin plate is in improved demand. We quote Tin Plate, Coke, $9 25@$10; Charcoal do. $11@11 50, according to brand; Charcoal Terne, $10 75@11; ditto IX., $12 50; Banca Pig Tin, 28c.; Straits do. 24c. @25c.; Australian do. 23c. Lead of all descriptions is plentiful and cheap.

METALS.

NEW YORK, Friday Evening, June 11, 1875.

Gold Coin.—During the week past gold has ranged from 116⅛ to 117⅛, and closed to-day at 116⅜.

Bullion.—Fine silver bar is quoted at $1 21@1 22, gold, per ounce, and fine gold bar, at par ($20 67, gold, per ounce) to ¼ per cent. premium. The above quotations show a decline in silver of 1c. from last week This is caused by the supply being greater than the demand, owing to the recent change from a silver to a gold standard by the German Government, its limited use as a legal tender in France and her monetary allies,

and the increasing production in the United States. At the present price, silver is worth but 1¼ per cent. more than United States notes.

Copper.—We are reported sales of about 300,000 lb. of Lake, at 23c. cash. The asking price to-day is 23½c.@23¾c., with 23c. bid. The London market, according to latest cable advices, remains at $82 10/@83 for Chili bars. There have been arrivals of new copper, aggregating about 1,000 tons, which have been delivered on account of purchases made some time ago. There is but little copper in this market that is not held by strong hands, nearly all outside lots having been taken up; hence the existing firmness. There is no inclination to deal in "futures." Manufacturers have not yet made large inquiries, and it is impossible to say when they will be in the market extensively. Some of the trade are looking for considerable inquiries from France before the end of the year; especially for copper to be used in copper-bronze for making guns. The guns made from this metal have given better satisfaction than others, and our Lake copper has given better satisfaction in making the metal. About 80 per cent. of copper is said to be used for this purpose.

ERNEST W. G. MURANT, Esq., of London, under date of May 28, says: "Copper has shown some signs of animation, and the deliveries continuing to be good, lower rates are not expected at present; bear sales, too, have been rather the exception in the past week, it being generally admitted that there is considerable room for improvement in the price of the article, which, however, may still be expected to move in sympathy with other metals to a certain extent. The sales of Chili have been 1,300 tons g. o. bs., and best brands at £82 2/ 6d. to £83 5/ for cash and arrival. English is very firm, and Australian steady."

Tin.—There is comparatively but little doing in either pig tin, or tin plates. We quote straits at 18¾c. @19c; Refined, 19c.; L. & F., 18¾c.@19c.; and Banca, 23½c. Charcoal tin plates were quoted at $8 37½@8 62½; ternes, $7 62½; coke tins, $6 87½@$7; and ternes, $6 50 @6 75—prices all gold. Yesterday's cable quotations were: Straits in London, £84 per ton, and in Singapore, $22 25 per picul. The stocks in this market are said to be very heavy.

ERNEST W. G. MURANT, Esq., of London, under date of May 28, says: "A good business has been done during the week at higher rates, the comparatively low prices recently ruling having acted as an inducement to purchasers to come forward. At the Dutch sale of Banca, on Wednesday, the average price was about 50¼fl., equal to nearly £88, laid down in warehouse here, and, therefore, Straits would appear to be relatively much cheaper now than at the time of the last sale on the 31st March. The transactions comprise about 300 tons Straits and 200 tons Australian, at 81/ 6d. to 84/ 9d. for cash and forward delivery."

Lead.—The transactions in this market have been very limited at 5·90c.@6c. gold, for Domestic. Foreign is very quiet at 6½c. gold. The Western market remains about as quoted last week; the quotation being equal to about 6·95c. currency laid down here.

Spelter and Zinc.—The business doing in spelter is very small—the prices being too high to warrant much business. We continue to quote at 7·15c. cash@7½c. currency 30 days. Sheet zinc is quiet, at 8¾c. gold.

Antimony.—There is but little doing in this article, which is quoted at 12½c @13c. gold.

Quicksilver.—This market is still quoted at 80c. per lb., and San Francisco quotes 65c.@70c. Our latest London advices quote at £11/15@£12 in warehouse. There are rumors of an attempt to place this article on a firmer basis. Our latest advices from San Francisco say that the supply is barely equal to the demand. An advance is looked for.

The San Francisco *Commercial Herald* of May 27, says: "Now that leading producers have ceased making consignments to New York, prices there have improved and Eastern orders now come here, causing some firmness. The export price here is 65c. though 70c. is the jobbing rate."

FINANCIAL.

New York Stocks.

June 11, 1875.

The market for railway securities is very much unsettled, our quotations showing a decline from prices reported in our last. The Delaware and Hudson Canal shares remain steady, with but few sales. The dealings in Quicksilver Mining Co.'s stock during the week have aggregated nearly 7,000 shares at quite an advance.

A semi-annual dividend of 4 per cent. has been declared by the Spring Mountain Coal Company, payable after June 10th.

Quotations and sale of stocks:

	Highest.	Lowest.	Closing.	Sales.
Pennsylvania Coal Co.	—	—	260	—
Consolidation Coal Co.	—	—	47	500
Spring Mt. Coal Co.	—	—	60	—
American Coal Co.	—	—	55½	—
Maryland Coal Co.	—	—	19	—
Cumberland Coal and Iron Co.	—	—	50	—
Del., Lack. & West. R.R. Co.	117½	117½	117½	1835
New Jersey Central R. R. Co.	108⅞	108⅛	108⅜	1032
Delaware and Hudson Canal Co.	119¾	119¾	119¾	115
Quicksilver Mining Co. prefrd.	23¾	21	23⅜	1100
" " Common.	18	16	17⅛	6355
Mariposa Land & Min. Co. ass. pd.	—	—	5	200
St. Louis & Iron Mountain R. R.	50	19	20	300
Lehigh & Wilkes-Barre Coal Co.	—	—	—	—
Manhattan Gas Co.			—	—
Total Sales.				11437
Sales for the week previous.				8985
Increase.				2452

The following are the sales of bonds for the same period:

	Amount.	Price.
Del., Lack. & W. RR convertible,	... at from	.. to....
N. J. Central RR. 1st consolidated mortgage bonds	40,000	" 105¼ " 106½
St. Louis & Iron Mount'n 1st Mtg bonds,	....	" .. ".....
St Louis & Iron Mountain, 2d Mtg. bonds	....	" .. ".....
N.J. Central Con Convt.	.. ..	" .. ".....
" " 1st Mtg. N.	2,000	" 111⅛ ".....
Del. & Hudson Canal, 1st Mtg. Reg. bonds, 1891	....	" .. ".....
Del. & Hudson Canal, 7s, 1884,	10,000	" 109 ".....
Del. Lack. & W. R. R., 2d Mtg.	....	" .. ".....
C. & O. R.R. 1st Mtg. Coupon on	...	" .. ".....
Total Sales.	$52,000	

Philadelphia Stocks.

PHILADELPHIA, June 11, 1875.

The Philadelphia Stock market closed irregular yesterday, prices, however, being generally sustained. The market has been moderately active during the week; the aggregate amount of sales still exhibits a decline, as compared with transactions for the week previous. Bonds were steady.

The Chesapeake and Delaware Canal Co. have declared a cash dividend of 2 per cent. on their outstanding stock, payable on and after June 10th.

At auction, on the 8th inst., $10,000 of the Emaus Iron Co. 1st mortgage coup. 7s sold at 90. This Company have made an assignment, and will blow out their furnaces.

We note recent quotations of the Washington Gas Co. at $38½.

Quotations and sale of stocks:

	Highest.	Lowest.	Closing.	Sales.
Reading R. R. Co.	53⅞	53½	53¾	4162
Lehigh Valley R. R. Co.	63¾	63	63⅛	759
Little Schuylkill R. R.	—	—	50	—
Catawissa R.R.	—	—	20½	200
" " Preferred.	—	—	42	47
" " New Preferred.	—	—	38¼	110
Huntingdon and B. T. R.R.	—	—	7	—
" " " Pref'd.	—	—	14	—
Minehill R.R.	54⅛	53½	54	31
Lehigh Coal and Nav. Canal.	49⅞	49⅛	49⅛	5576
Morris Canal	—	—	51	—
" Preferred.	—	—	128	—
Pennsylvania Canal.	—	—	—	—
Schuylkill Navigation Canal.	—	—	7¼	—
" Preferred.	14⅞	—	14⅜	73
Susquehanna Canal.	—	—	6	—
Westmoreland Coal Co.	—	—	80	—
Buck Mountain Coal Co.	—	—	39	11
Cambria Iron Co.	—	—	16¾	—
Locust Mountain Coal Co.	—	—	—	—
Emaus Iron Co	—	—	—	—
Crane Iron Co	—	—	—	—
Total sales.				11,969
Sales for the week previous.				16 297
Decrease				4,228

Sales of the various bonds for the period under review have been as follows:

	Amount.	Price.
Reading RR. 6s, 44.80.	.... at	— to ....
Catawissa RR., new 7s.	3.000 "	105¼ " 106
H and B. T. RR., 2d mortgage, 7s.	4,000 "	102¾ " ....
Lehigh convt. gold loan.	.... "	.. " ....
Pa. and N. Y. Canal. 7s.	1,000 "	106¼ " ....
Schuyl. Nav. 6s, '82. 444—44 at 82, and	10,200 "	82⅛ " ....
L. V. RR. con. bonds.	1,000 "	103 " ....
H. and B. T. 1st Con. 7s. bonds	.... "	.... " ..
R. C and I. Co. irregular mort. bonds, Brady Tract.	.... "	.. " ....
Lehigh Nav. 6s. 1884	2,500 "	103 " ....
Reading RR. debenture bonds.	.... "	.. " ....
" " R. G. M. 7s. coup.	.... "	.. " ..
" " new convertible 7s.	1,000 "	107⅜ " ....
" " 7s, 93	.... "	.. " ....
Reading C. and I. Co. debenture bonds.	.... "	.. " ....
Reading C. and I. Co. mort. bonds, Tamaqua Tract.	.... "	.. " ....
Reading C. and I. Co. mort. bonds, St. Clair Tract.	.... "	.. " ....
R. C. & I. Co, Wetherill tract.	.... "	.. " ....
" " " " Locust Mountain Summit Improvement tract.	.... "	.. " ....
R. C. & I. Co. Helfenstim tract.	1,000 "	88⅜ " ....
Lehigh Valley RR. 6s, reg.	4,000 "	103 " 103½
" " " 7s.	5,000 "	109 " ....
" " " con. mtge. 6s reg.	18,000 "	98¼ " ....
Lehigh Coal & Nav. Co. 6s, gold loan.	3,000 "	103⅜ " ....
" " " " 6s, 1877.	.... "	.. " ....
" " " " RR. loan	900 "	101¾ " 102
Schuylkill Nav. 6s, '95.	.... "	.. " ....
" " 7 per cent. boat loan.	1,500 "	90¾ " ....
" " 6s, '72.	.... "	.. " ....
" " 6 p.c. Impvt. loan.	.... "	.. " ....
R. C. & I. Co., Glenlworth tract.	.... "	.. " ....
Chesapeake & Delaware Canal, 6s.	.... "	.. " ....
Susquehanna Canal, 6s.	.... "	.. " ....
Pennsylvania Canal, 6s.	.... "	.. " ....
Shamokin Valley & Pottsville R.R., 7s.	.... "	.. " ....
Del. Div. Canal, 6s	.... "	.. " ....
Morris Canal, 1st mtge. 6s.	1,000 "	101 " ....
Total Sales.	$57,100	

Gold and Silver Stocks.

SAN FRANCISCO, June 9, 1875.

Quotations of San Francisco Stocks, in many instances, exhibit quite a decline from prices reported in our last. The market, however, closed firm to-day with a decided upward tendency. The product of the Consolidated Virginia Mining Company is very large, the amount of ore taken out of the mine averaging from 4,000 to 5,000 tons per week. The developments in the mine are all of the most encouraging character, and the superior quality of the ore is unexceptionably maintained.

The Great Eastern Consolidated Quicksilver Mining Company, to work mines in Lake County, California, have filed articles of incorporation with a capital stock of $16,500,000.

Quotations June 9, 1875.

Gould & Curry	18	Overman	61
Savage	101	Raymond & Ely	41
Chollar Potosi	77	Eureka G. V.	7
Ophir	56	Best & Belcher	49
Hale and Norcross	39	Kentuck	14
Crown Point	32	Meadow Valley	6
Yellow Jacket	76	Alpha	18
Eureka Consolidated	69	Sierra Nevada	12
Belcher	27	Union Consolidated	7
Imperial.	7	Mexican	22
Consolidated Virginia	408	Caledonia	15
California	59	Silver Hill	11

Copper Stocks.

BOSTON, June 10, 1875

Copper stocks are inactive and prices nominally unchanged Quotations are as follows:

Allouez	12¾	National	..
Calumet and Hecla Co.	152½	Petherick	..
Copper Falls	9	Quincy	41
Central.	31	Ridge	6¾
Franklin	....	Rockland	1

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I. THE ENGINEERING AND MINING JOURNAL, containing the official reports of proceedings, transactions and notices of meetings, will be sent to each Member and Associate on the payment of his annual dues. Back numbers cannot, as a rule, be sent.

II. Dues (ten dollars per annum) are payable on election and at the annual (May) meeting. Members and associates elected at the February meeting pay ten dollars only to May of the following year. Remittances should be made, as far as possible, by P. O. Order, payable to the Secretary.

III. Blank proposals for membership can be had on application to the Secretary.

IV. The second volume of Transactions has been mailed to all home members and associates not in arrears. Any member who failed to receive his copy will please notify the Secretary promptly. The Institute is not responsible for the loss of the volume in those cases where members have changed their residences and have omitted to inform the Secretary. Volumes I. and II. will be sent, post-paid, to non-members, at five dollars each.

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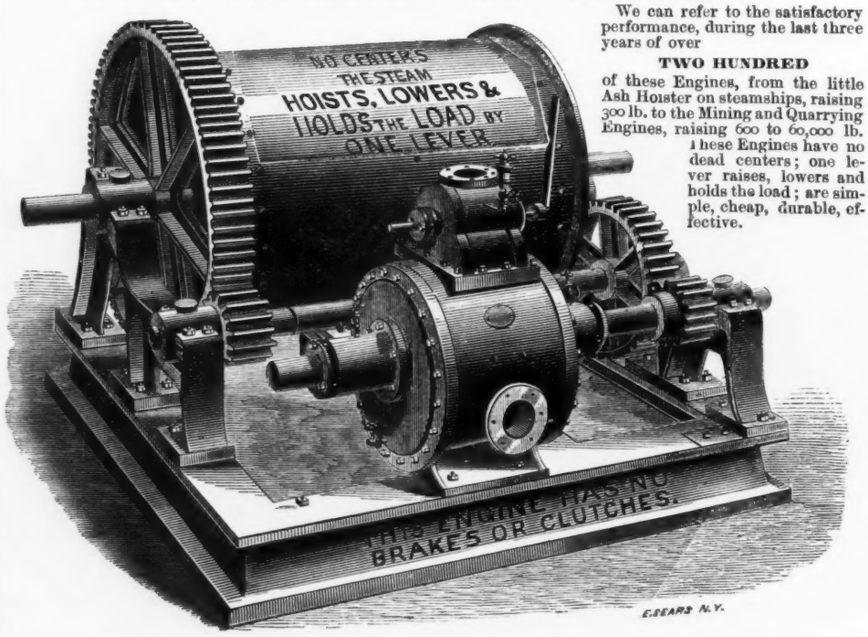

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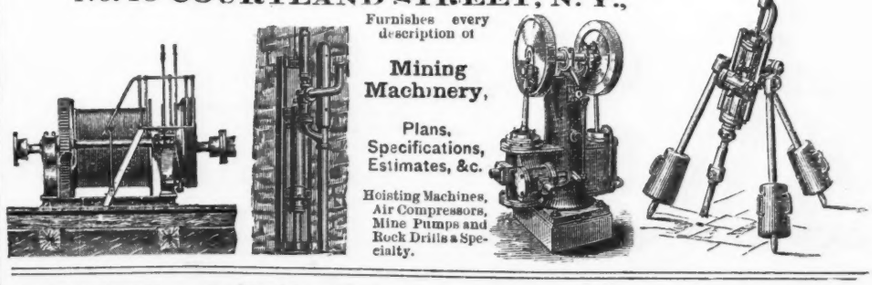

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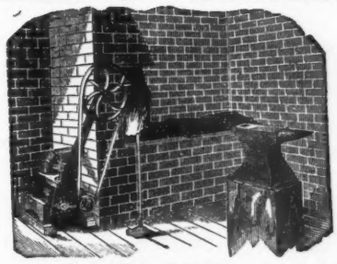

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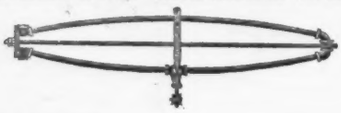

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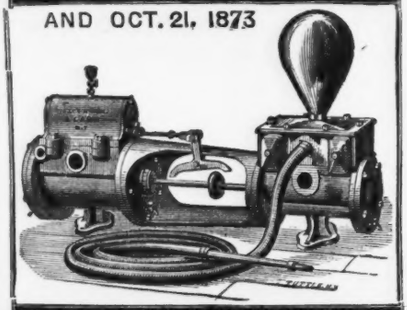

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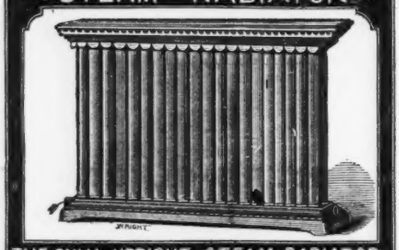

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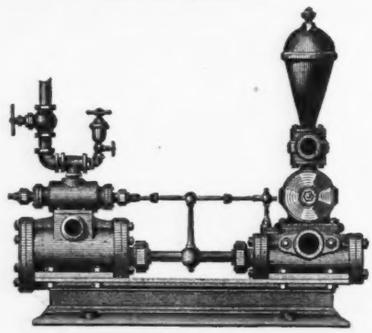

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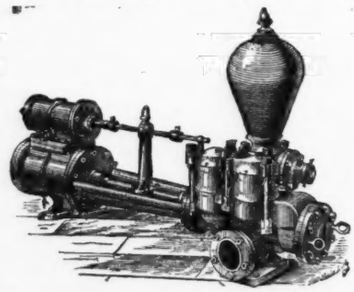

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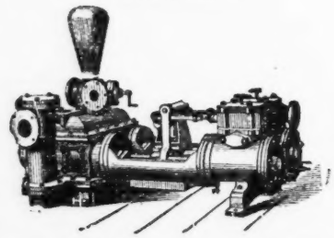

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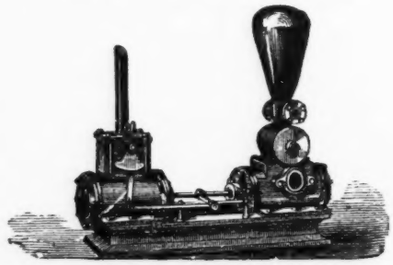

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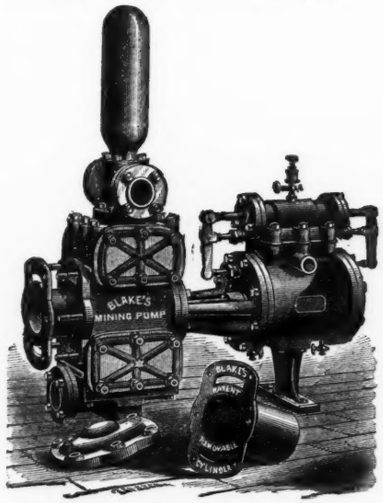

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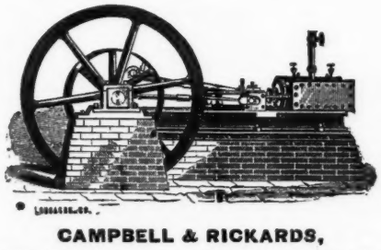

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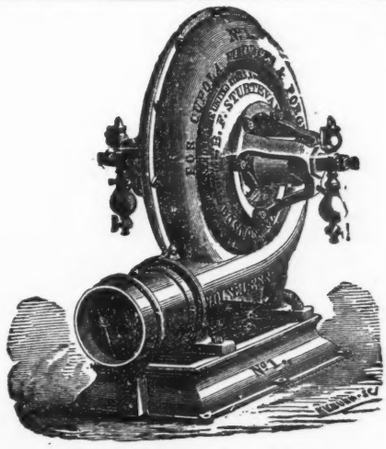

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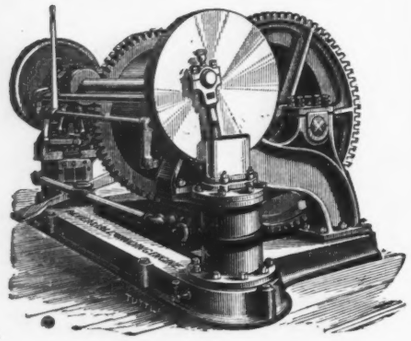

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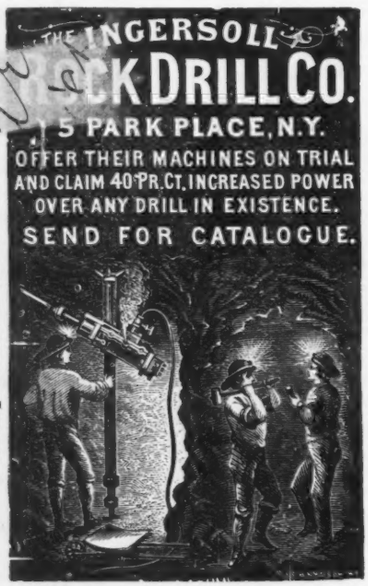
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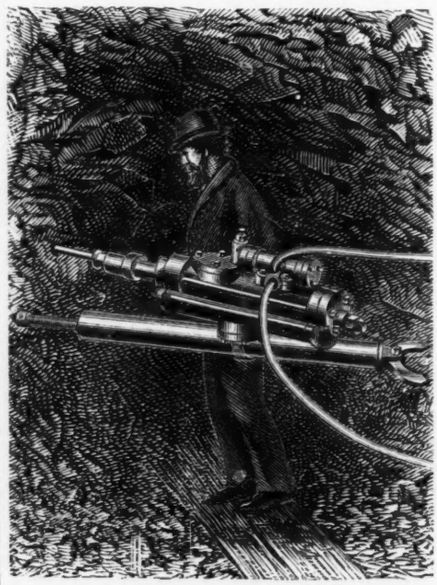

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